1 Appendix 4A

2

Engineering Figures

Attachment 51 River Protection Project Waste Treatment Plant 09/02

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APPENDIX 4A

ENGINEERING FIGURES

The figures listed below are included in this appendix, and are to be used in conjunction with the

text in the DWPA Chapter 4.

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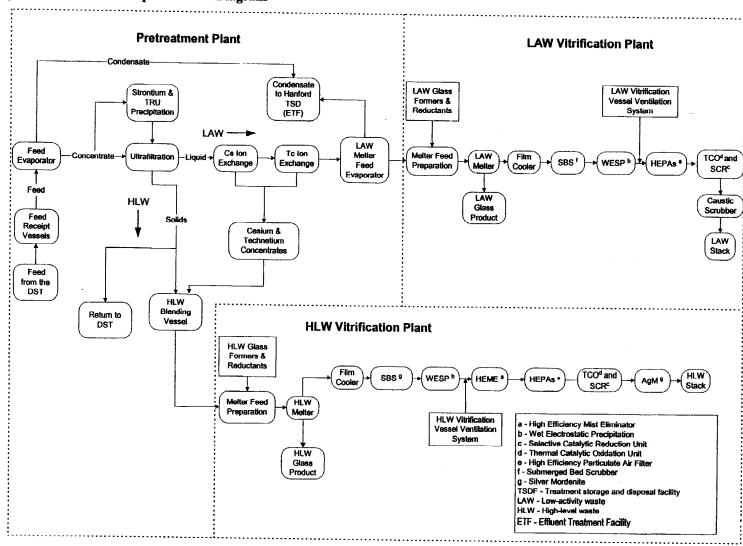
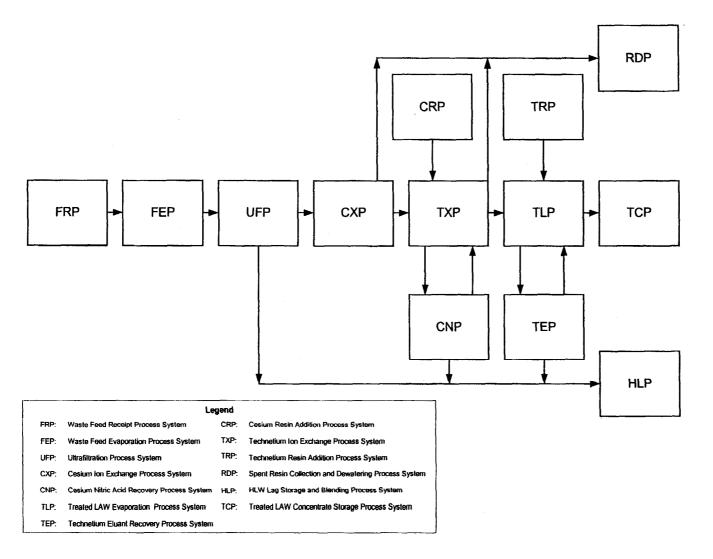


Figure 4A-1 WTP Simplified Flow Diagram

Figure 4A-2 Primary Pretreatment Process Systems



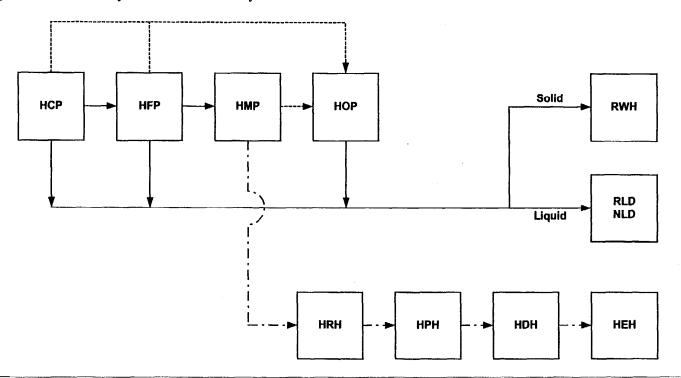
LCP LFP GFR LMP LOP LVP Solid RWH

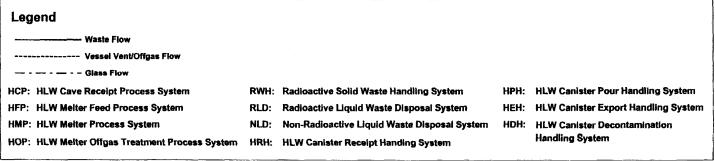
RLD NLD

Figure 4A-3 Primary LAW Vitrification Systems

Legend - Waste Flow ----- Vessel Vent/Offgas Flow LCP: LAW Concentrate Receipt Process System LVP: LAW Secondary Offgas/Vessel Vent Process System LPH: LAW Container Pour Handling System LFP: LAW Melter Feed Process System RWH: Radioactive Solid Waste Handling System LRF: LAW Container Receipt Handling System LFH: LAW Container Finishing Handling System **GFR: Glass Former Reagent System** RLD: Radioactive Liquid Waste Disposal System LEH: LAW Container Export Handling System LMP: LAW Melter Process System NLD: Non-Radioactive Liquid Waste Disposal System LOP: LAW Primary Offgas Process System

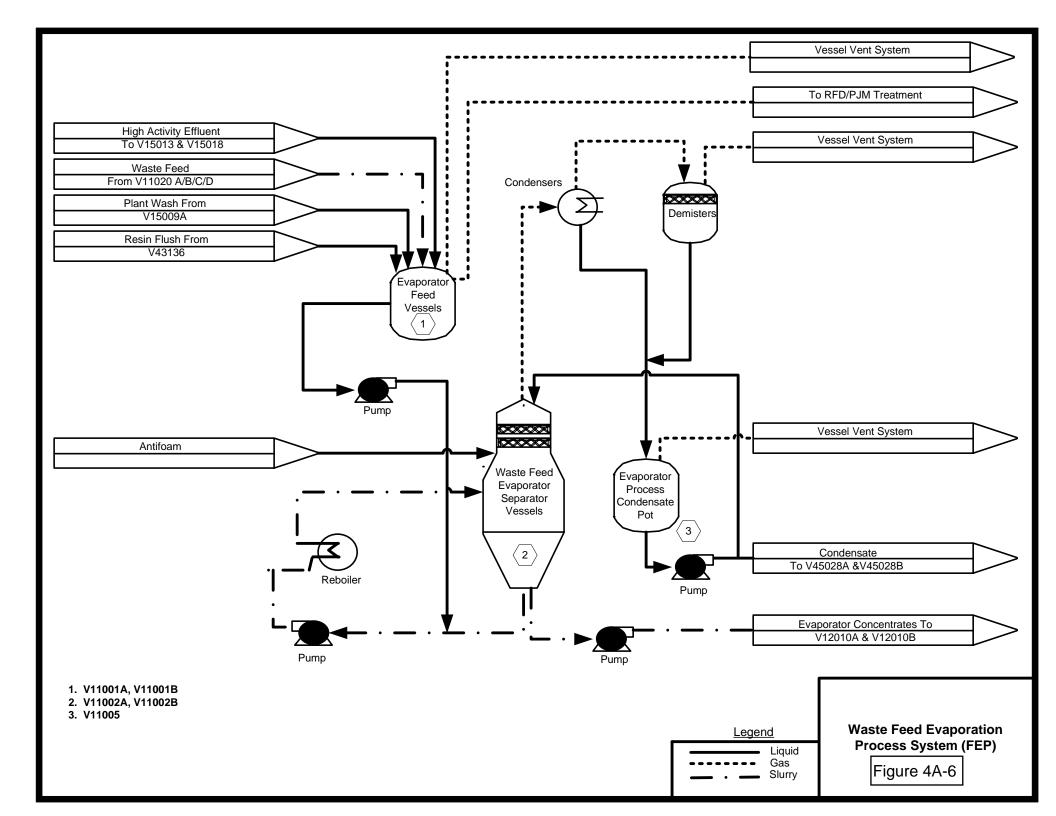
Figure 4A-4 Primary HLW Vitrification Systems

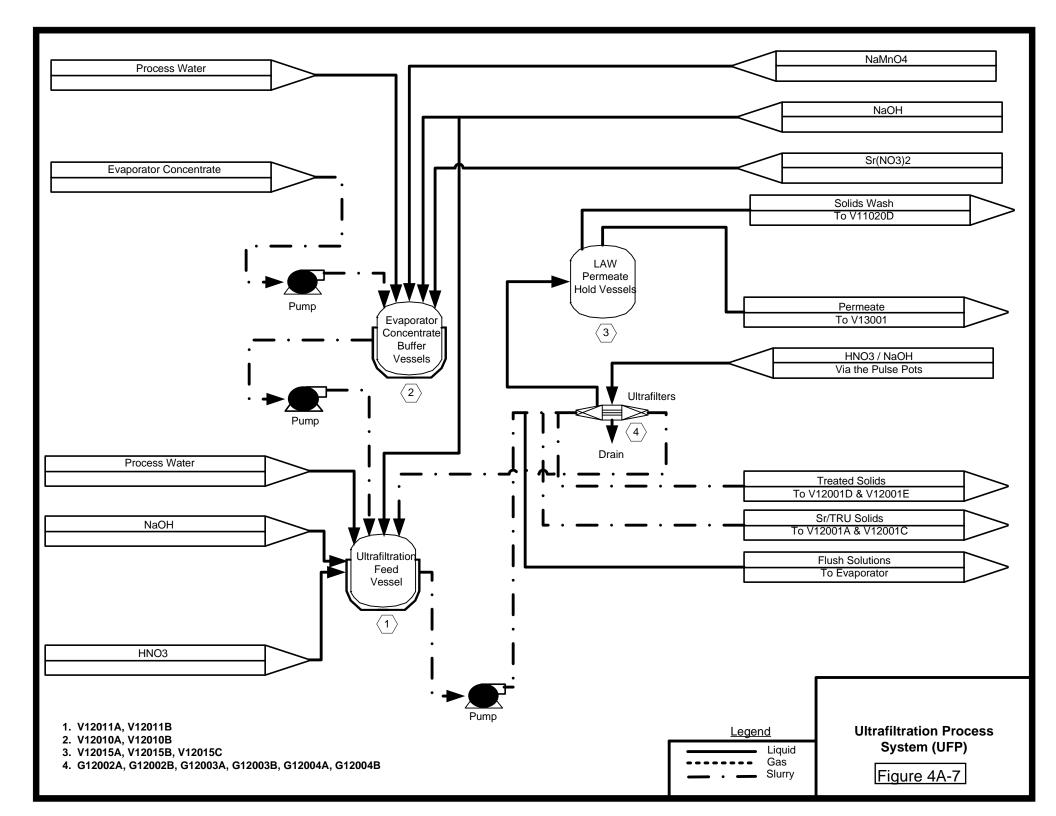


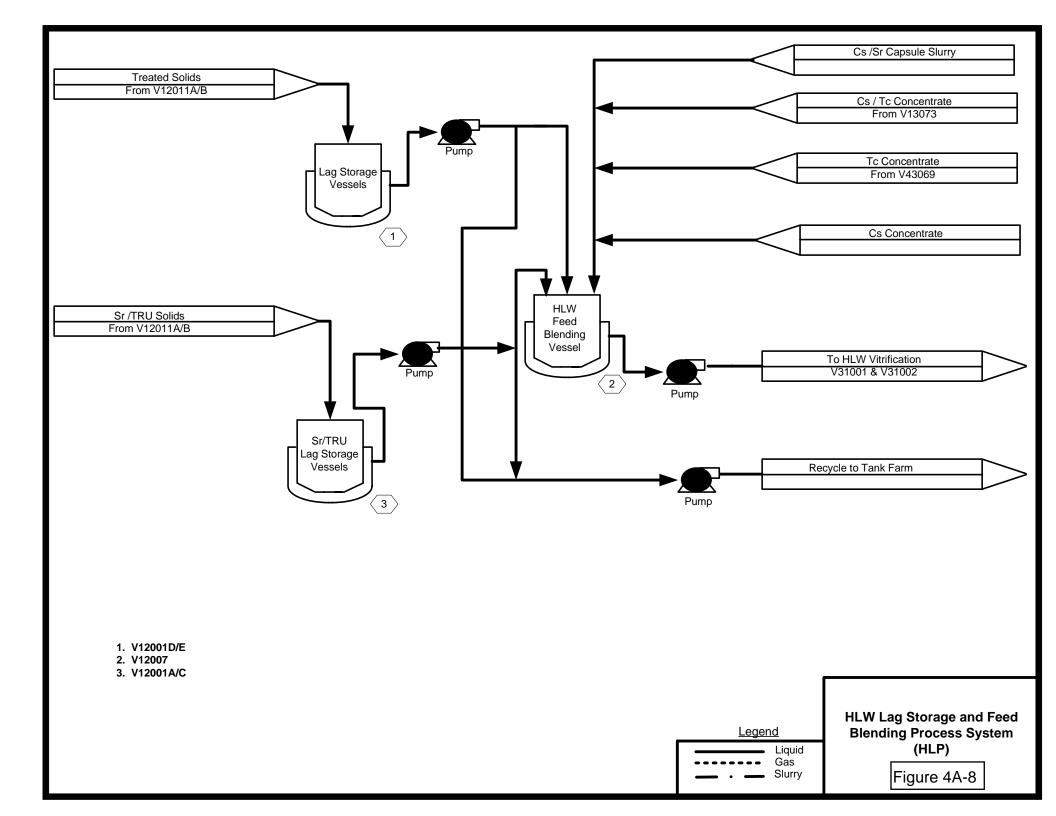


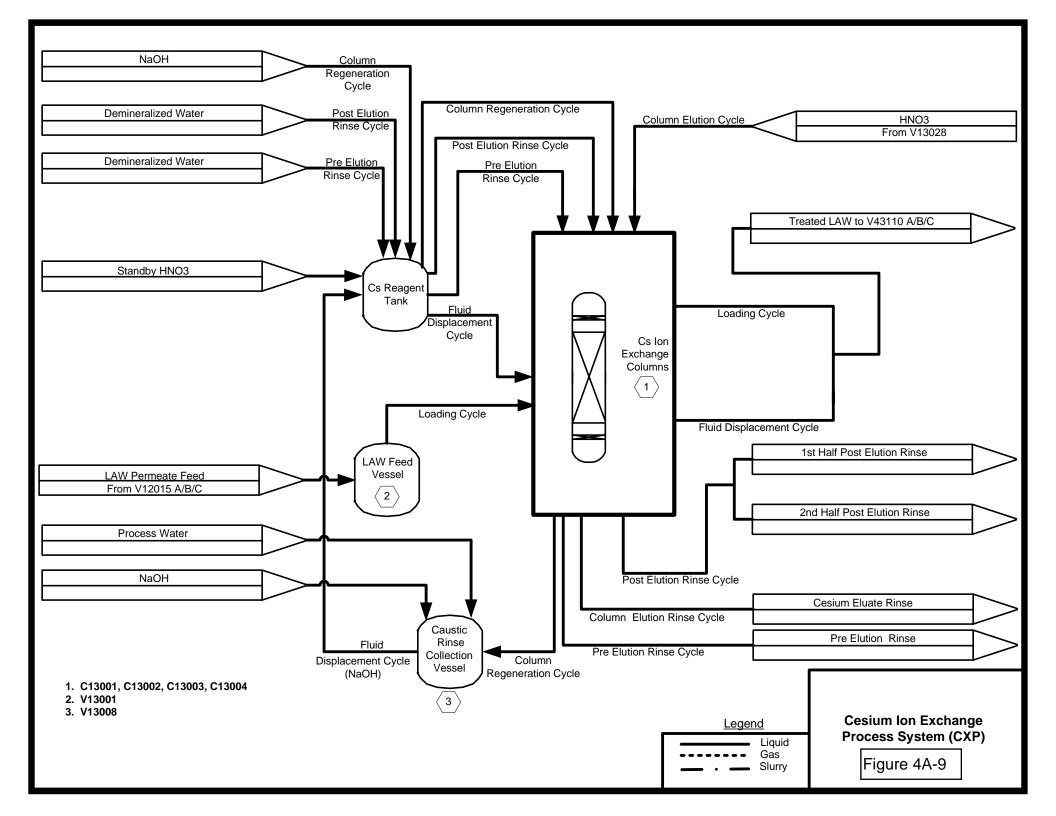
Treated LAW Concentrate From V41001 Solids Wash From V12015 A/B/C Waste Waste Waste Feed Feed Feed Receipt Vessel Tank Farm Receipt Receipt Receipt Vessel Vessel WTP Interface Waste Feed To V11001A &V11001B HLW Solids Return From V12001 A/C/D/E NaNO2 Process Water Pump Line Flush Makeup Vessel Treated LAW Concentrate To V41001 Legend Waste Feed Receipt Process System (FRP) 1. V11020A 2. V11020B 3. V11020C 4. V11020D Liquid Gas Sturry

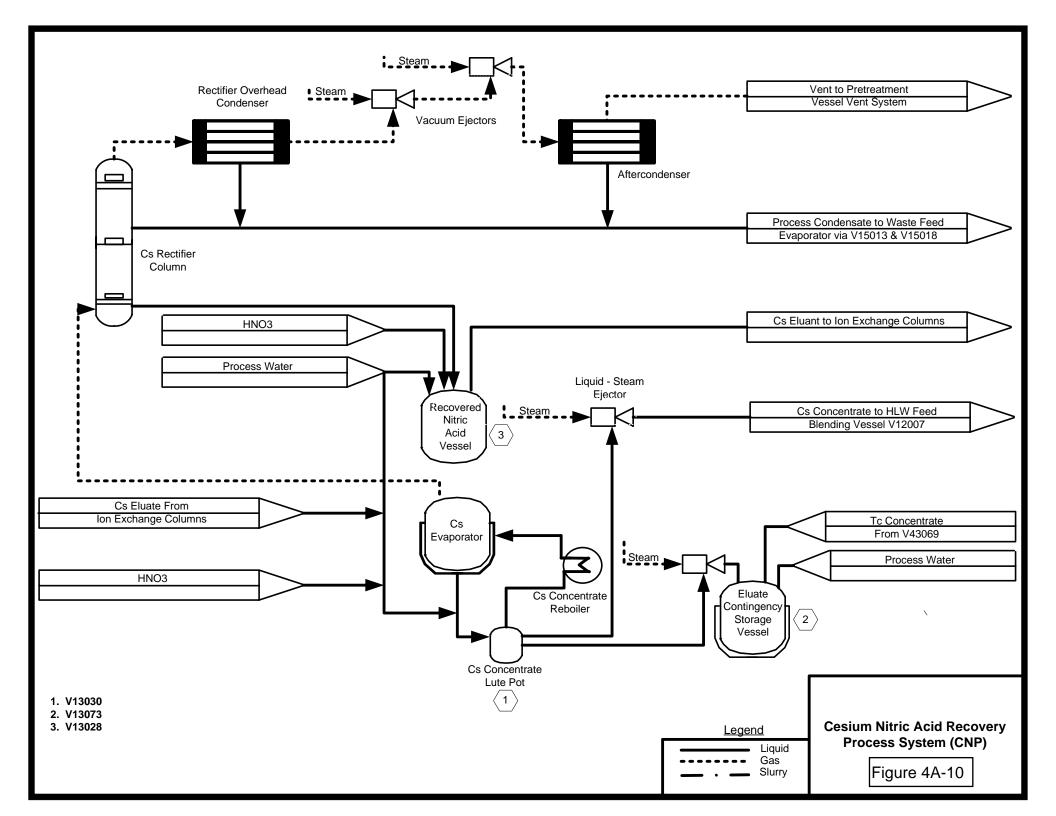
Figure 4A-5 Waste Feed Receipt Process System (FRP)











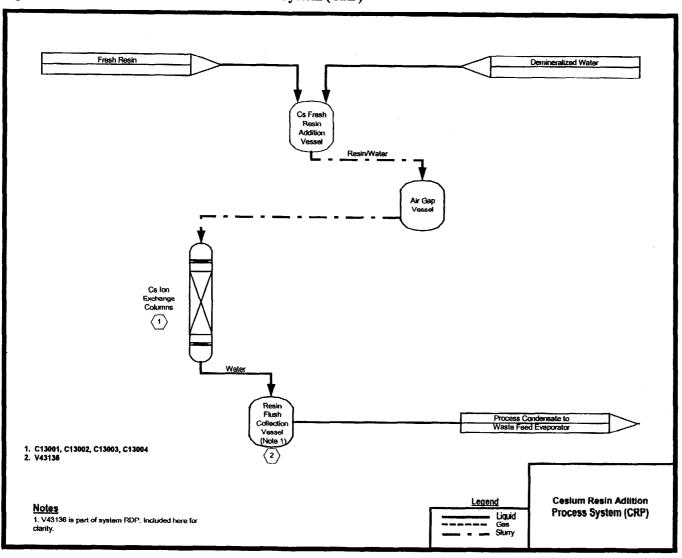
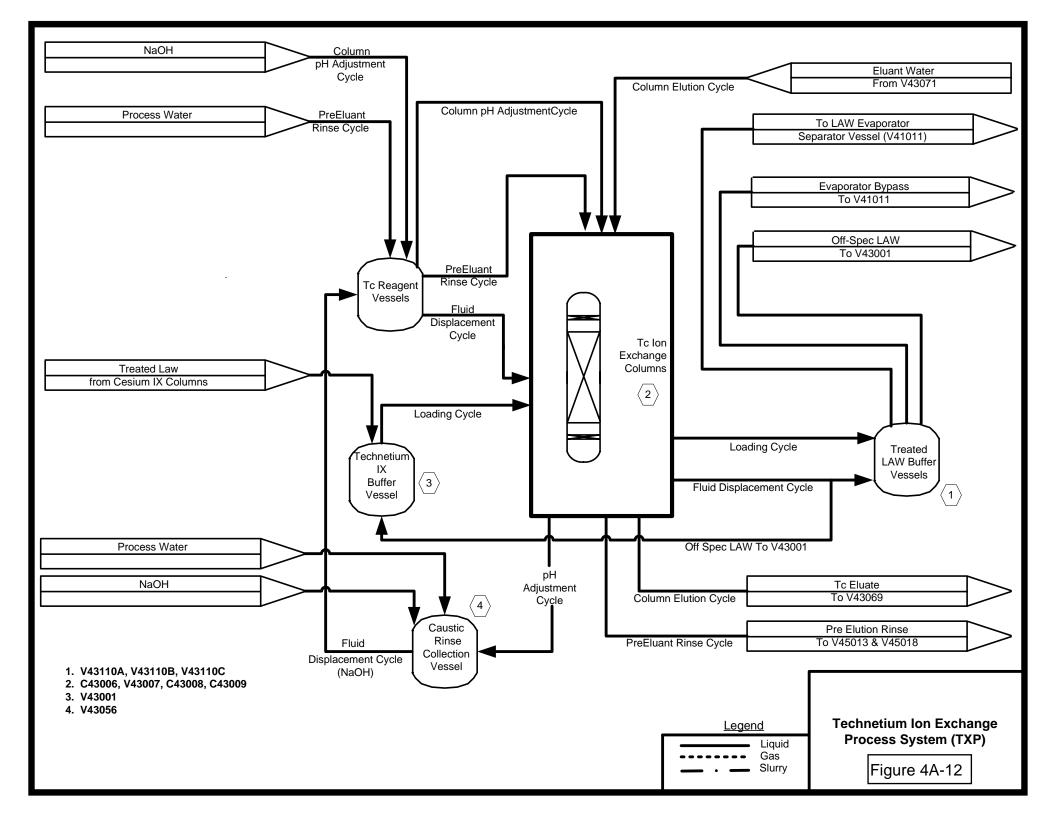


Figure 4A-11 Cesium Resin Addition Process System (CRP)



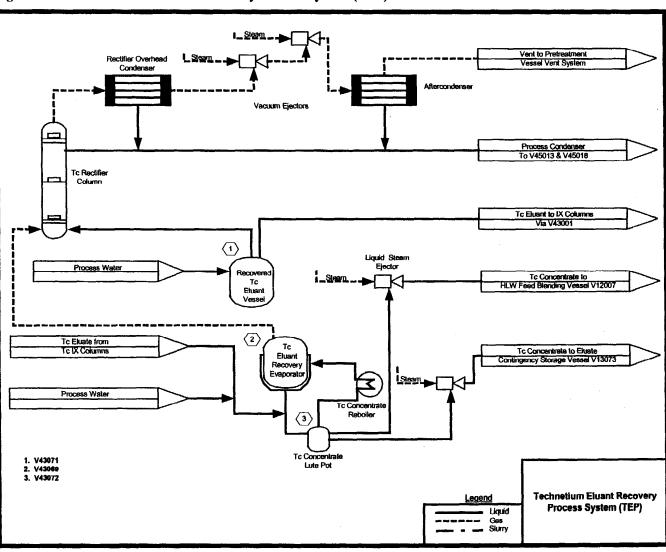


Figure 4A-13 Technetium Eluant Recovery Process System (TEP)

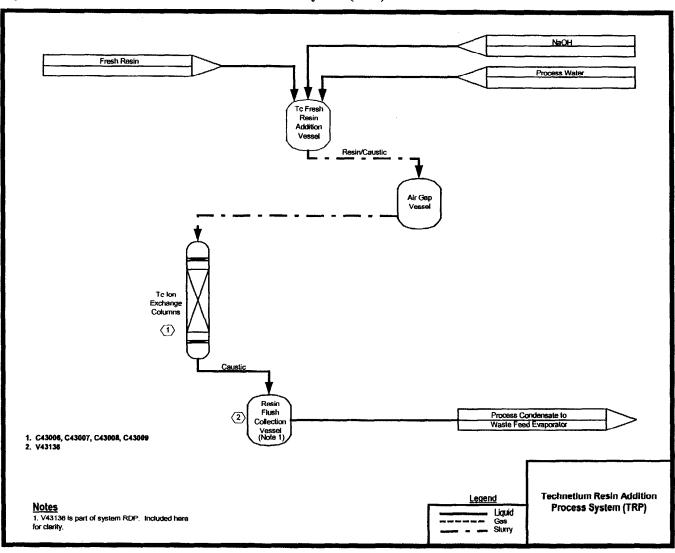
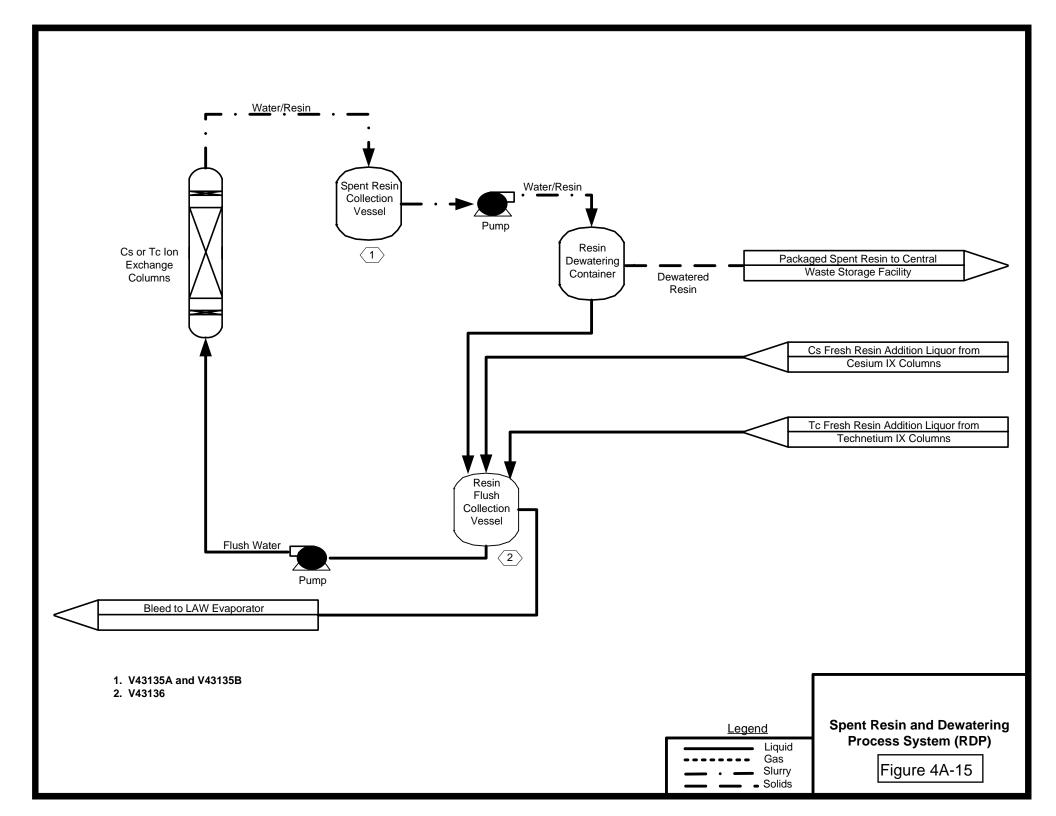


Figure 4A-14 Technetium Resin Addition Process System (TRP)



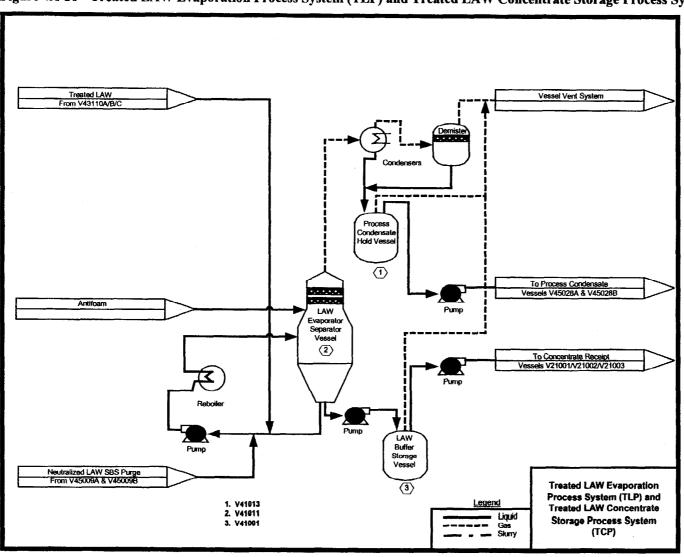
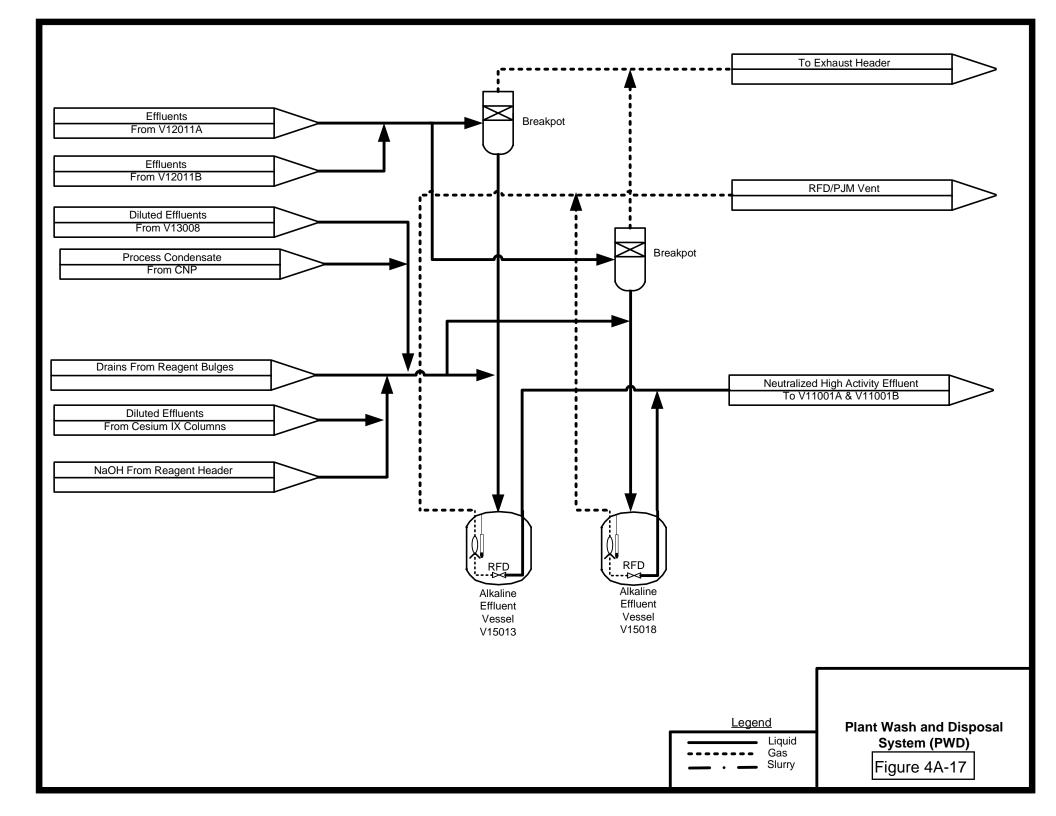


Figure 4A-16 Treated LAW Evaporation Process System (TLP) and Treated LAW Concentrate Storage Process System (TCP)



Pretreatment Plant

Radioactive Liquid Waste

Disposal System (RLD) and

Non-Radioactive Liquid Waste Disposal System (NLD)

Legend

---- Gas

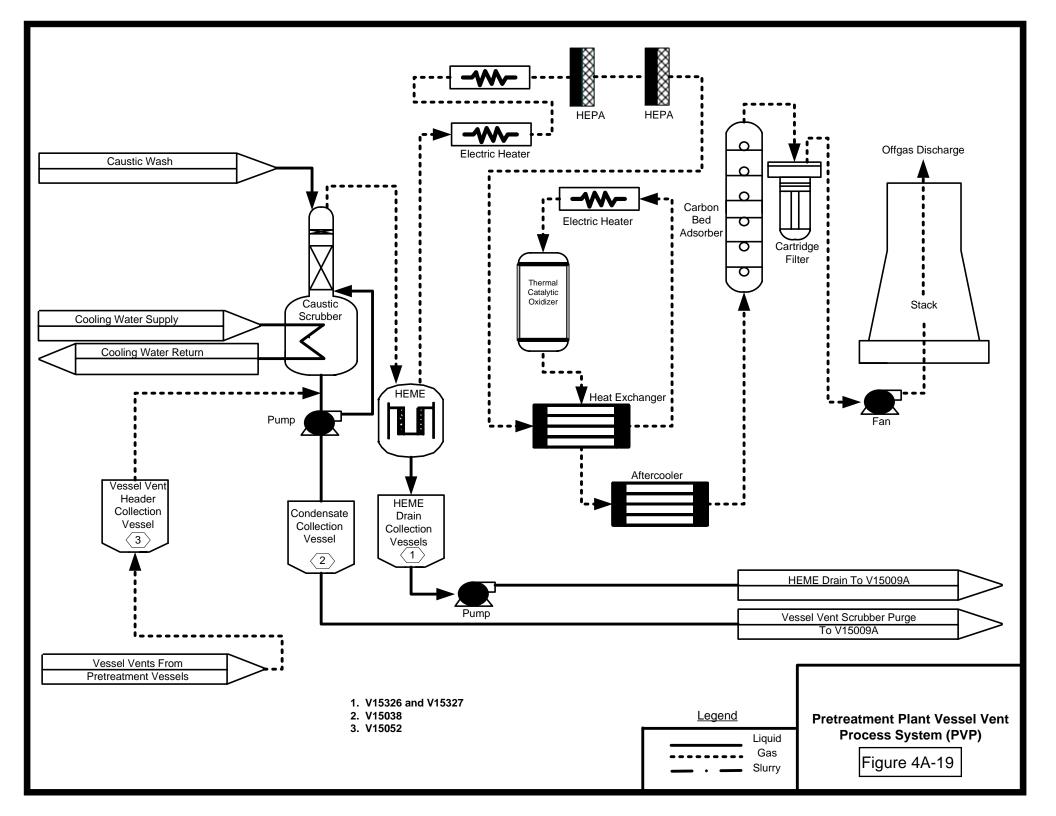
1. V45028A

2. V45028B

3. V15009B

Condensate From V11005 Effluent From V45013 & V45018 Condensate From V41013 C1/C2 Floor Drains and Sumps Effluent Treatment Facility Process Process Effluent From Condensat Condensat V45013 & V45018 Vessel V12002 Overflow Overflow from Pretreatment Uttimate C3/C5 Drain/Sump Tank Farm Transfer Line Drain Overflow Vessel **(**3) C3/C5 Floor Drains

Figure 4A-18 Pretreatment Plant Radioactive Liquid Waste Disposal System (RLD) and Non-Radioactive Liquid Waste Disposal System (NLD)



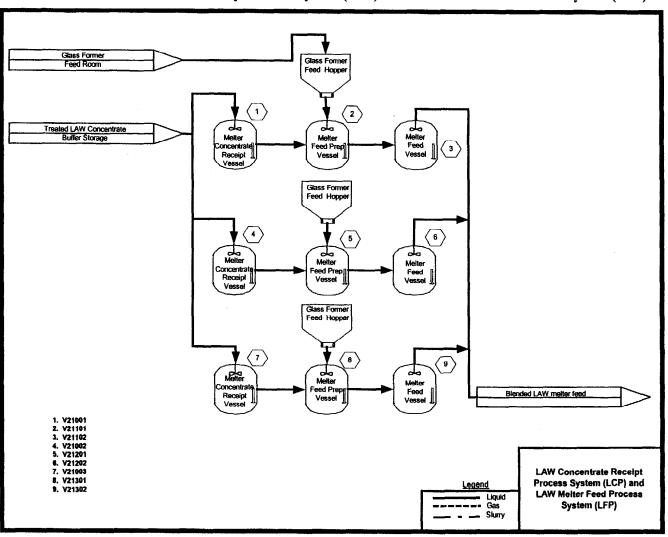
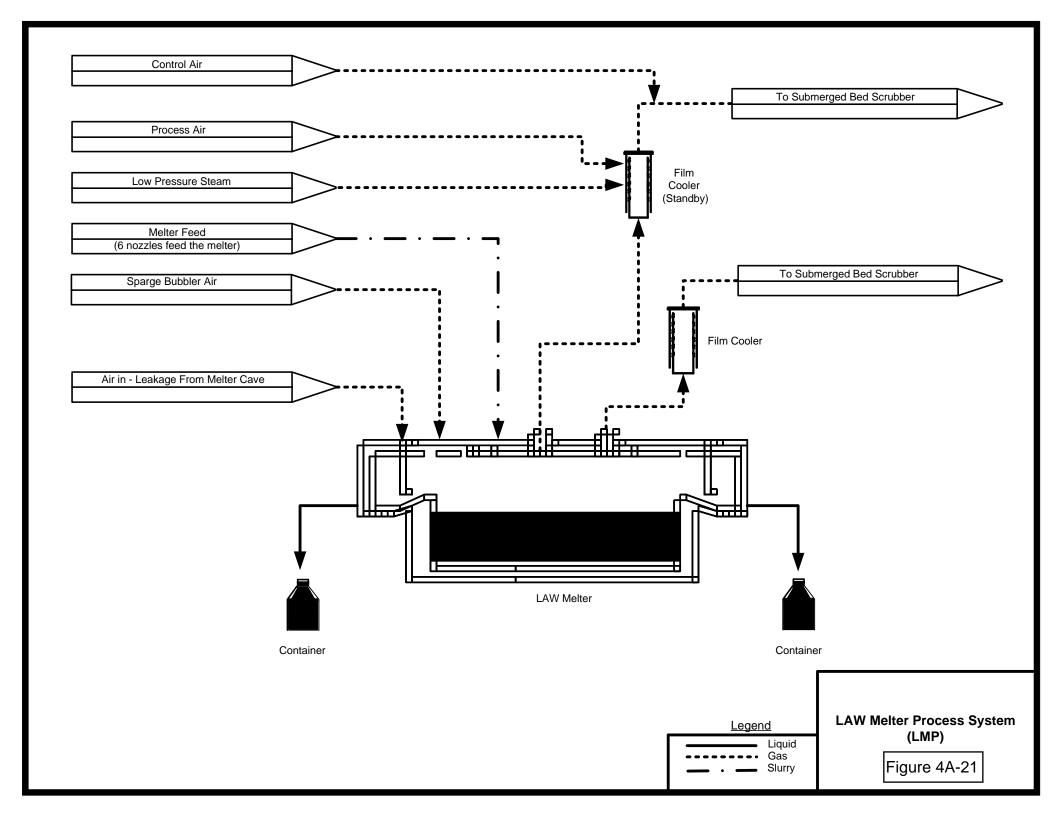
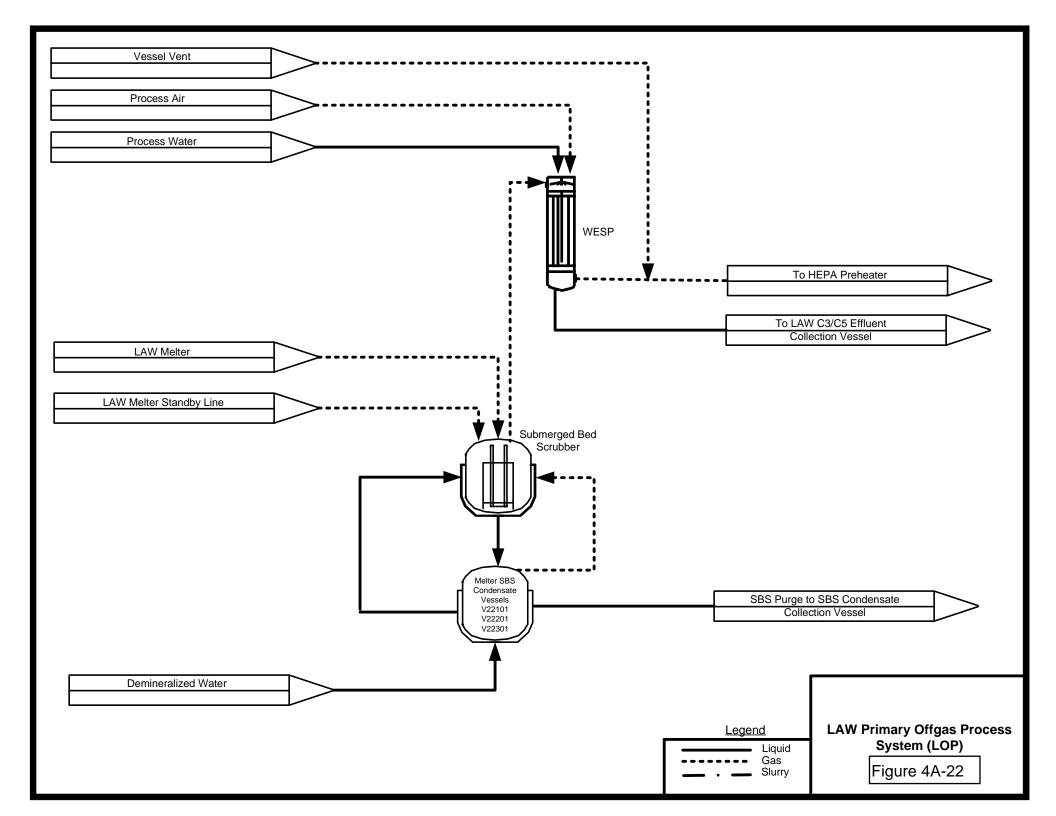
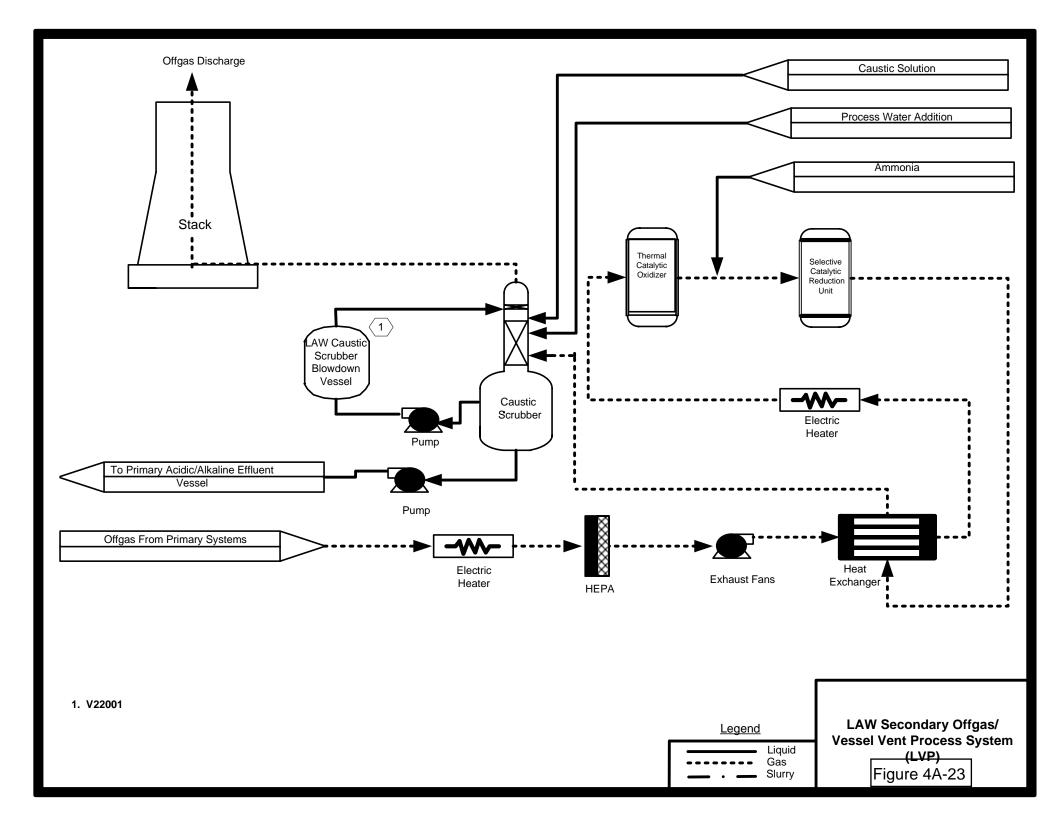


Figure 4A-20 LAW Concentrate Receipt Process System (LCP) and LAW Melter Feed Process System (LFP)







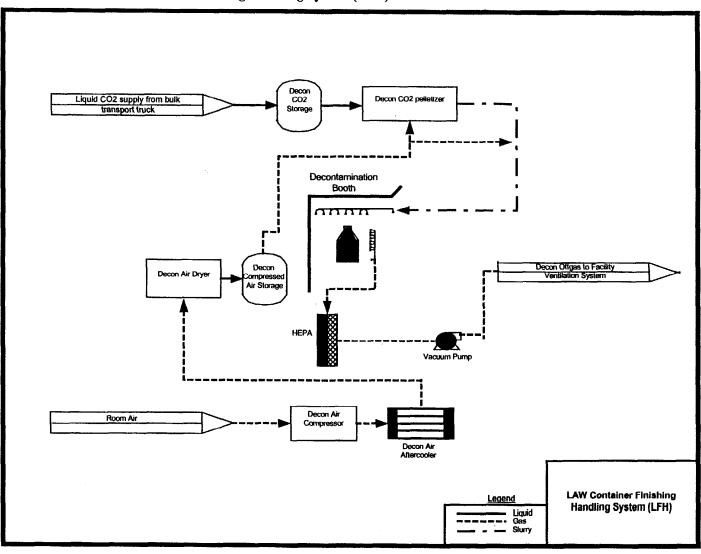


Figure 4A-24 LAW Container Finishing Handling System (LFH)

Effluent C1/C2 Floor Drains and Sumps System RLD Collection Pump Effluent 1/C2 Drain LAW Caustic Scrubber Blowdown Vessel Overflow Coffection Pretreatment Tank Vessel Washes Plant Wash C3/C5 Drain/Sump (3) SBS Condensate Collection Vessel WESP Drains $\langle 2 \rangle$ V21001/V21002/V21003 Overflows LAW C3/C5 Effluent C3/C5 Floor Drains Collection SBS Condensate Purge 1. V25001 2. V25002 3. V25003 LAW Vitrification Plant Radioactive Liquid Waste Disposal System (RLD) and <u>Legend</u> Non-Radioactive Liquid Liquid Gas Waste Disposal System (NLD)

Figure 4A-25 LAW Vitrification Plant Radioactive Liquid Waste Disposal System (RLD) and Non-Radioactive Liquid Waste Disposal System (NLD)

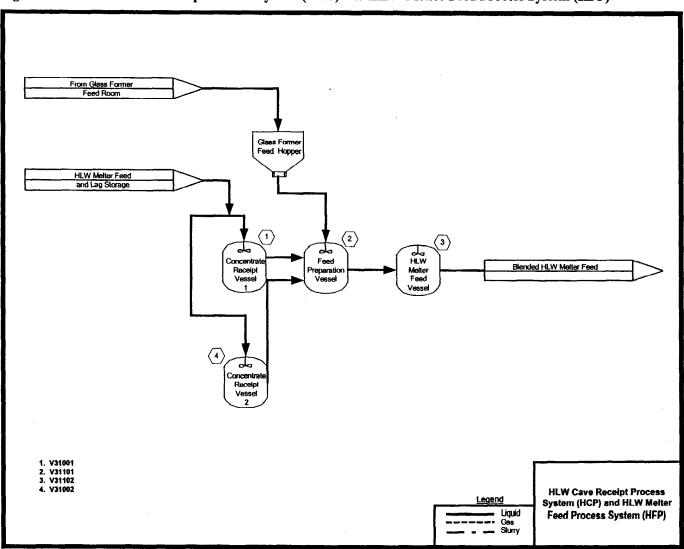
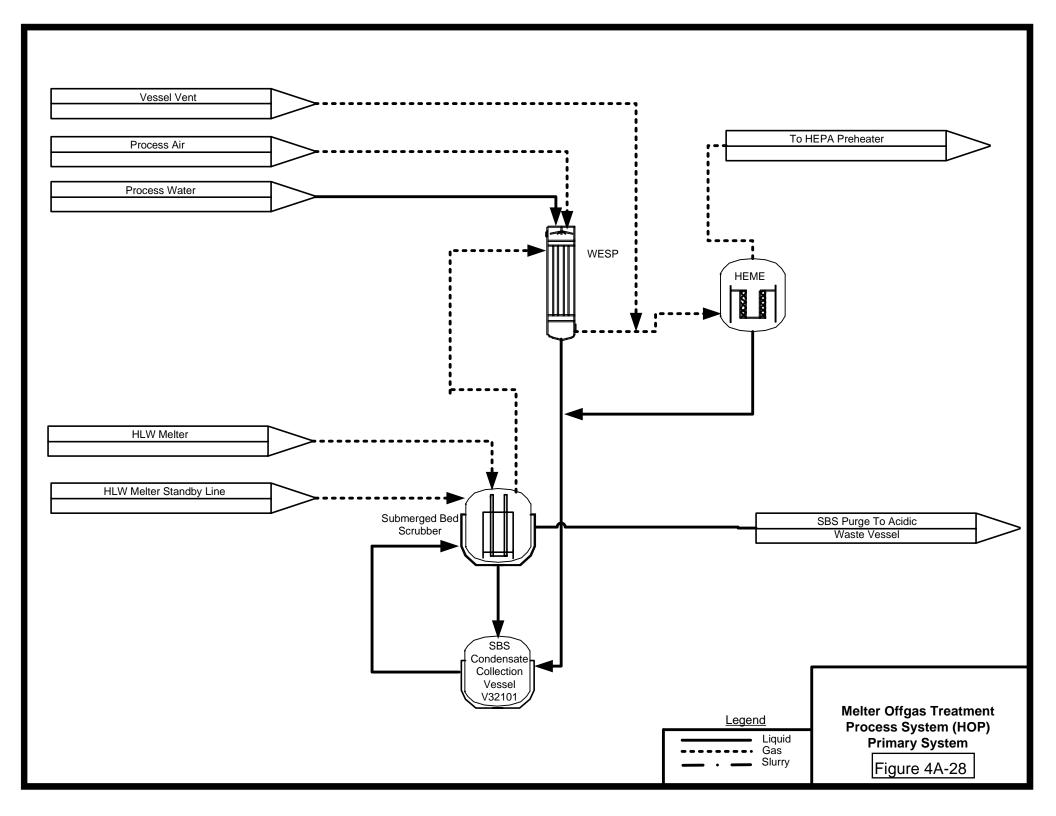


Figure 4A-26 HLW Cave Receipt Process System (HCP) and HLW Melter Feed Process System (HFP)

Pressure Control Air To Submerged Bed Scrubber Film cooler air Melter Feed Sparge Bubbler Air Air In - Leakage (from melter cave) To Submerged Bed Scrubber (Standby) HLW Melter Cenister **HLW Melter Process System** Legend (HMP) Liquid
Gas
Slurry

Figure 4A-27 HLW Melter Process System (HMP)



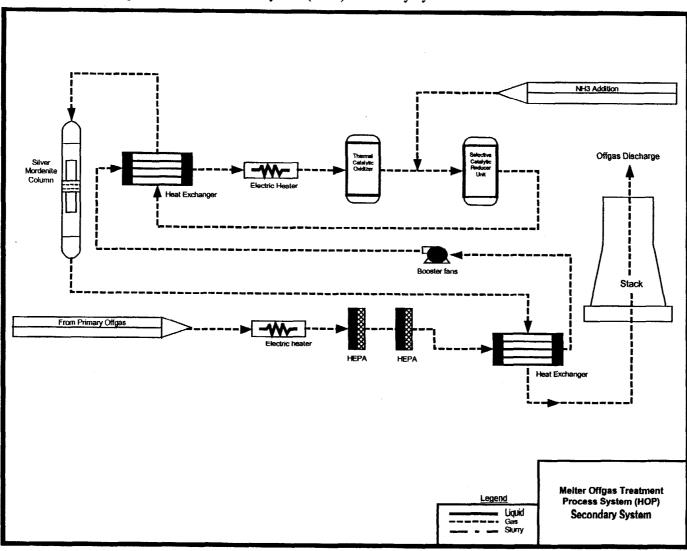


Figure 4A-29 Melter Offgas Treatment Process System (HOP) Secondary System

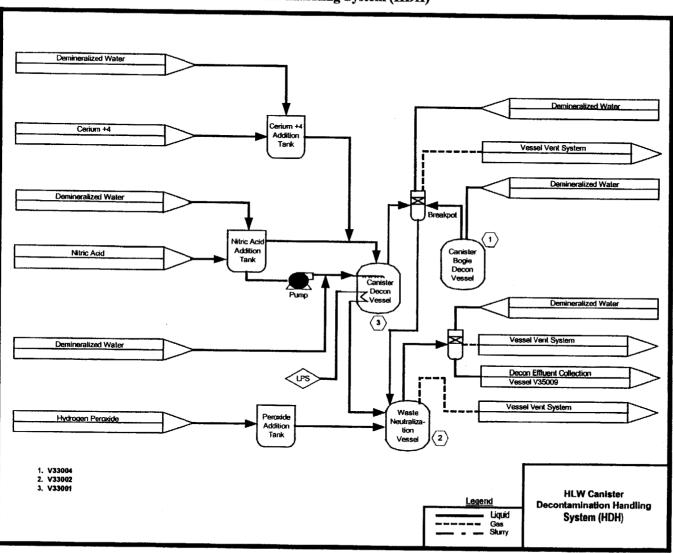


Figure 4A-30 HLW Canister Decontamination Handling System (HDH)

SBS Column $\langle 5 \rangle$ $\langle 1 \rangle$ HLW From SBS Condensate Collection Vessel V32101 Effluent Waste Transfer Vessel NaOH $\langle 2 \rangle$ Offgas Drains Canister Bogie Decon Vessel V33004 Collection Vessel Decon Bogie $\langle 3 \rangle$ $\langle \mathbf{6} \rangle$ Decon Effluent Breakpot Decon Effluent Plant Wash Collection Vessel Vessel Vessel and Sump Washings Decon Effluent Breakpot Wash and Drains Vessel 1. V35002 2. V35038 3. V35009 4. V35003 **HLW Vitrification Plant** Radioactive Liquid Waste Disposal System (RLD) and 5. V12002 6. V15009A Non-Radioactive Liquid Liquid Gas Slurry Waste Disposal System (NLD)

Figure 4A-31 HLW Vitrification Plant Radioactive Liquid Waste Disposal System (RLD) and Non-Radioactive Liquid Waste Disposal System (NLD)

Figure 4A-32 Typical Tank System - Waste Feed Receipt Process System (FRP) Typical Tank System - Waste Feed Receipt Process System (FRP)

4A-37

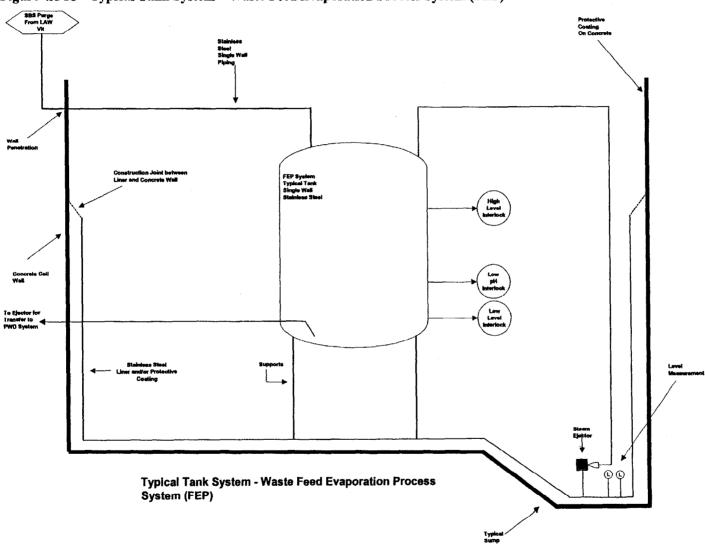


Figure 4A-33 Typical Tank System - Waste Feed Evaporation Process System (FEP)

Typical Tank System - Ultrafiltration Process System (UFP)

Figure 4A-34 Typical Tank System – Ultrafiltration Process System (UFP)

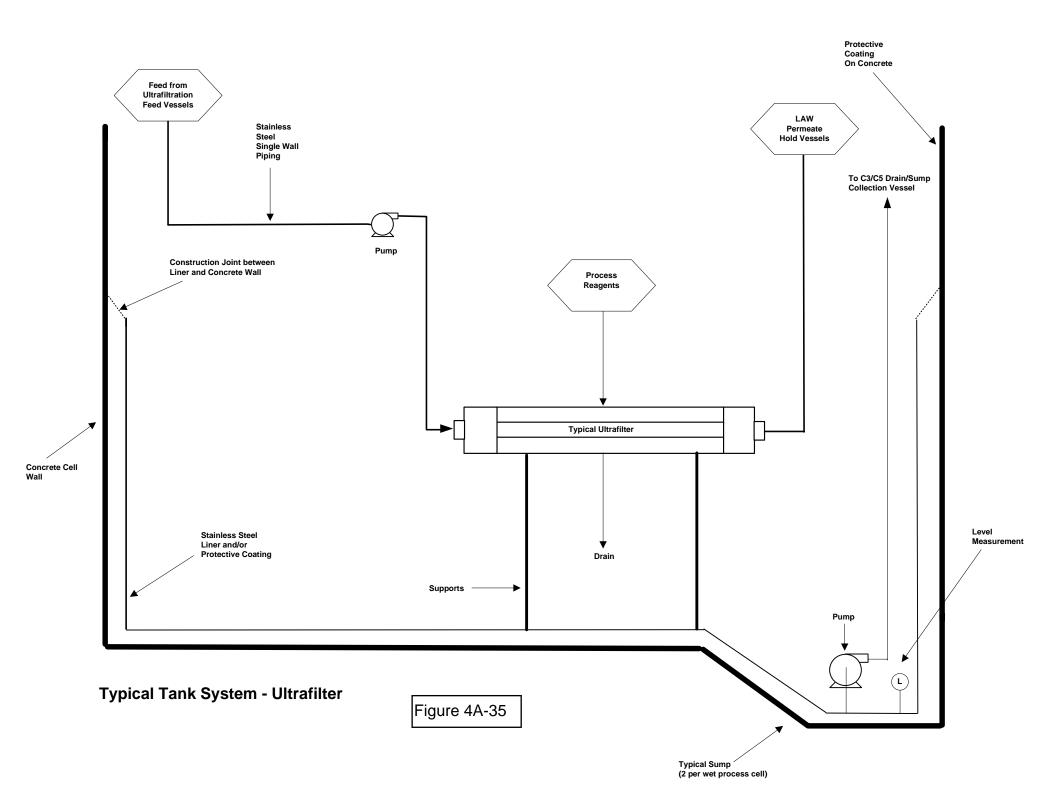


Figure 4A-36 Typical Tank System – Side Emptying Vessel – Cesium Ion Exchange Process System (CXP), Cesium Nitric Acid Recovery Process System (CNP), Technetium Ion Exchange Process System (TXP), and Technetium Eluant Recovery Process System (TEP)

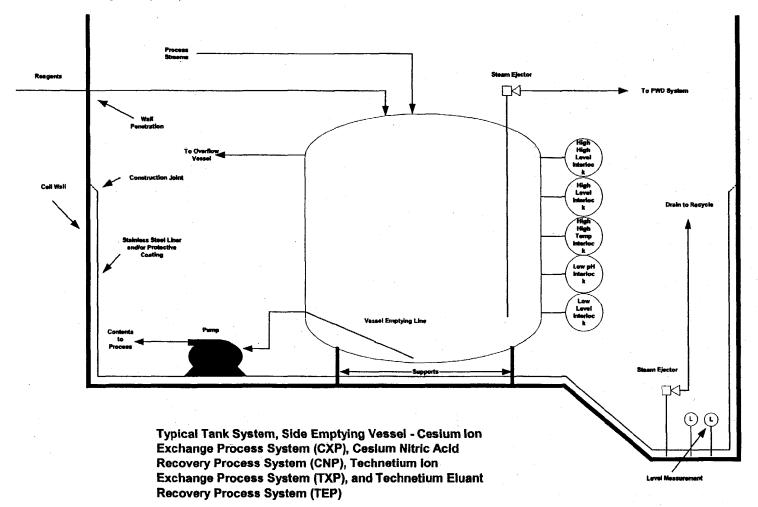
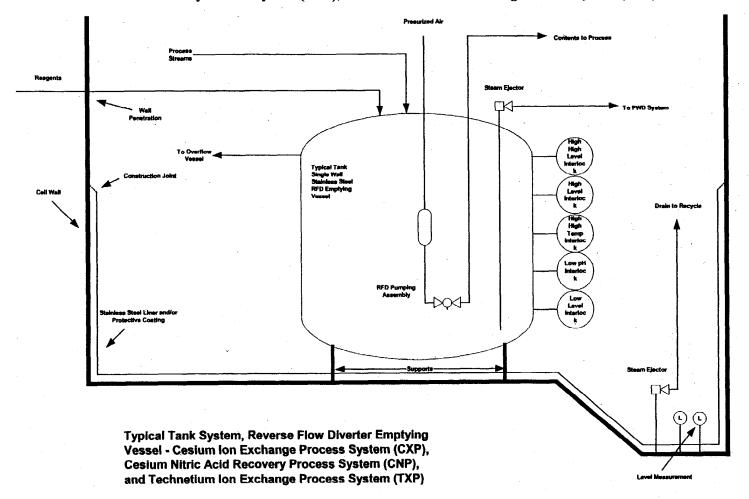


Figure 4A-37 Typical Tank System, Reverse Flow Diverter Emptying Vessel – Cesium Ion Exchange Process System (CXP), Cesium Nitric Acid Recovery Process System (CNP), and Technetium Ion Exchange Process System (TXP)



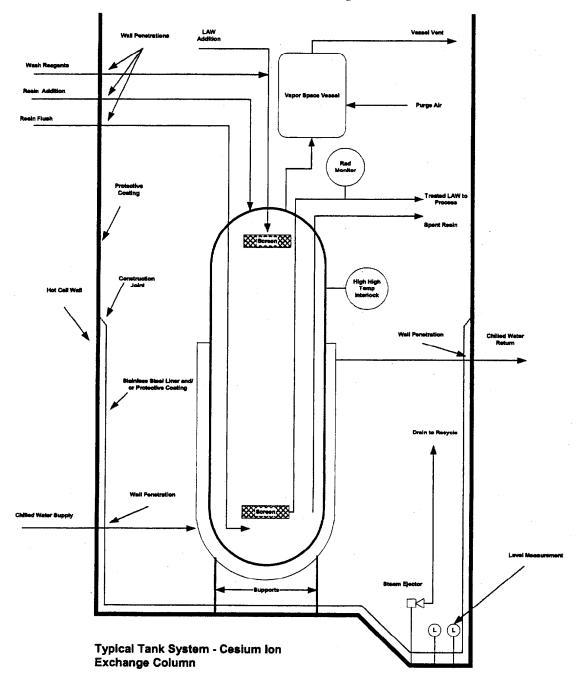
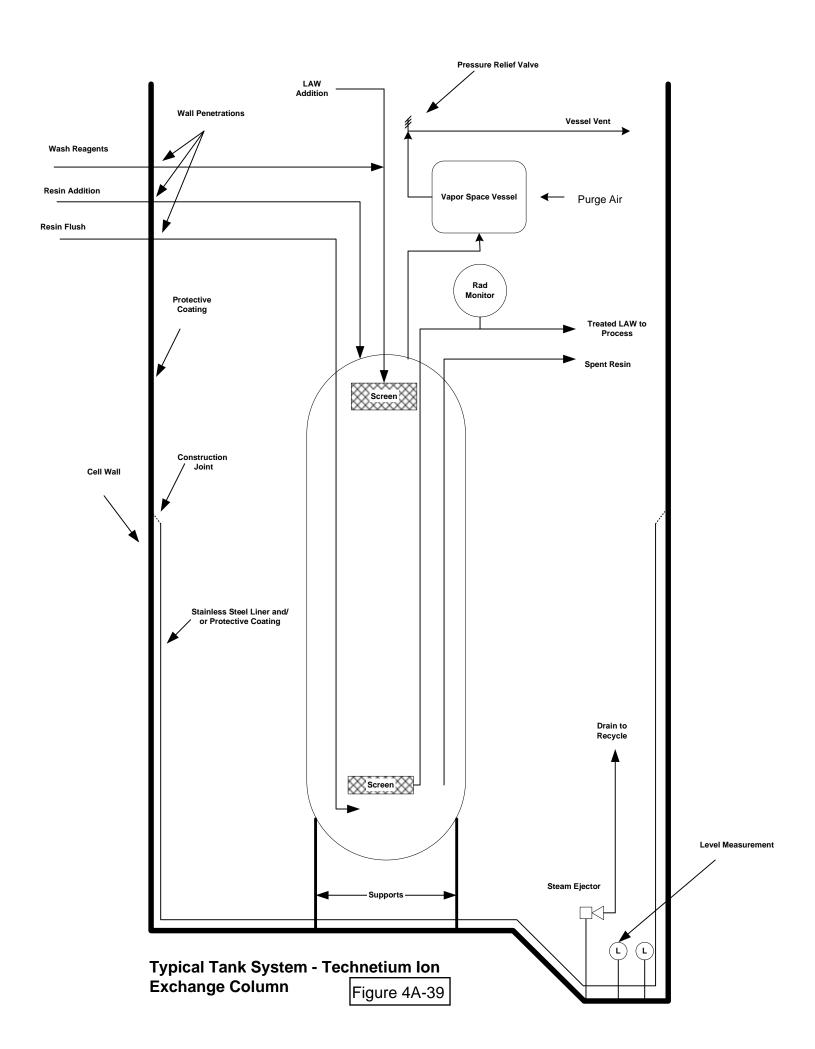
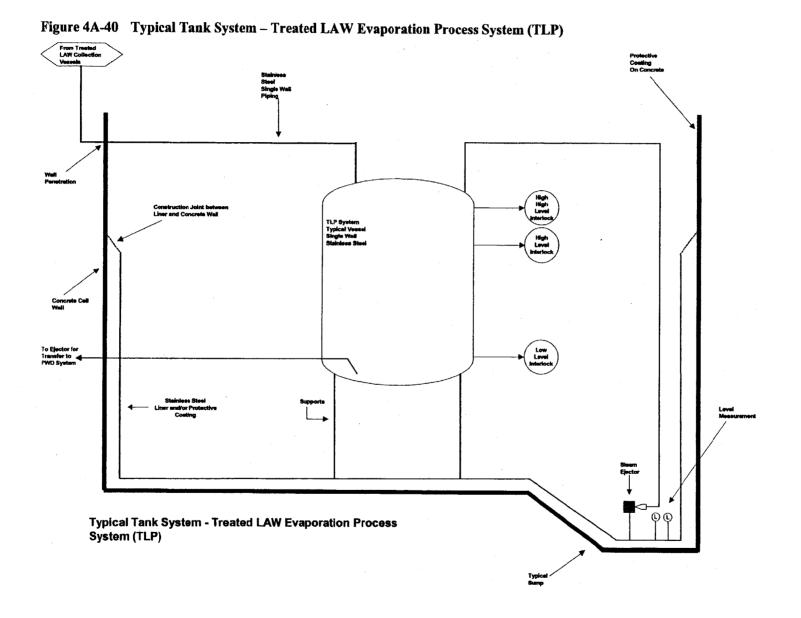


Figure 4A-38 Typical Tank System - Cesium Ion Exchange Column





4A-45

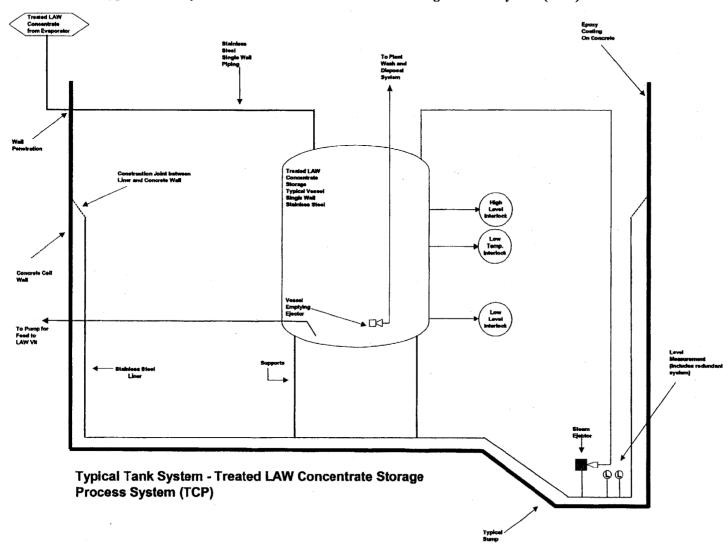


Figure 4A-41 Typical Tank System – Treated LAW Concentrate Storage Process System (TCP)

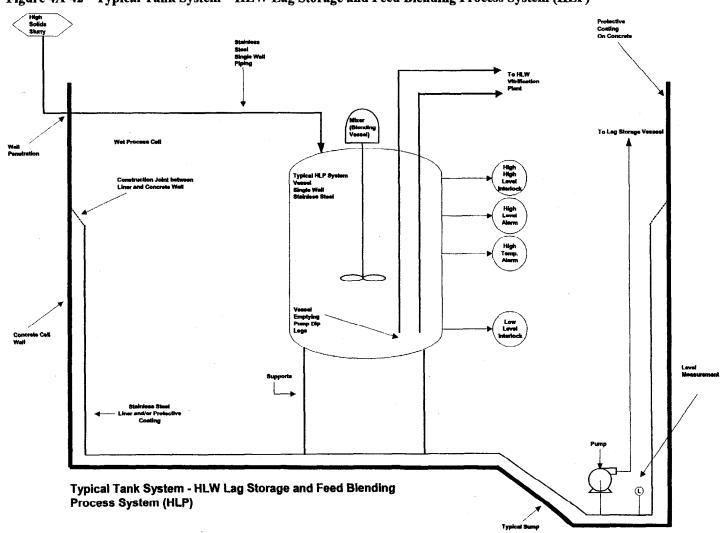


Figure 4A-42 Typical Tank System – HLW Lag Storage and Feed Blending Process System (HLP)

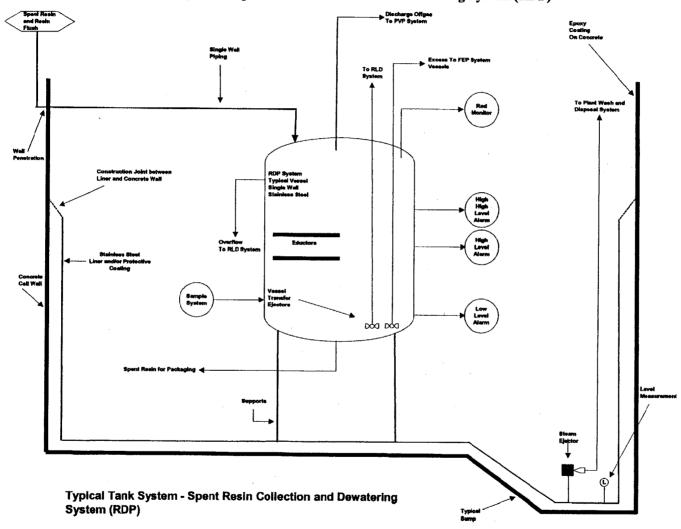


Figure 4A-43 Typical Tank System - Spent Resin Collection and Dewatering System (RDP)

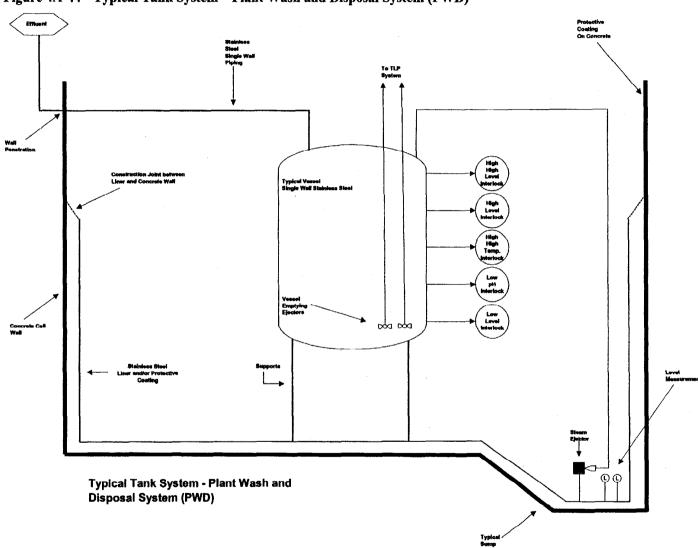


Figure 4A-44 Typical Tank System – Plant Wash and Disposal System (PWD)

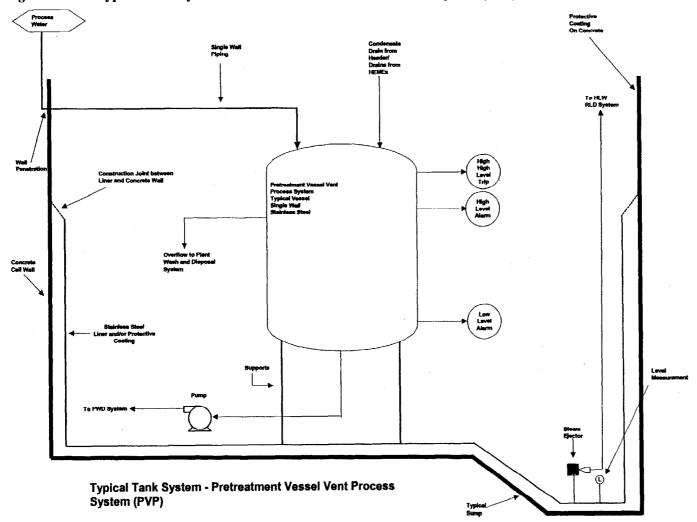
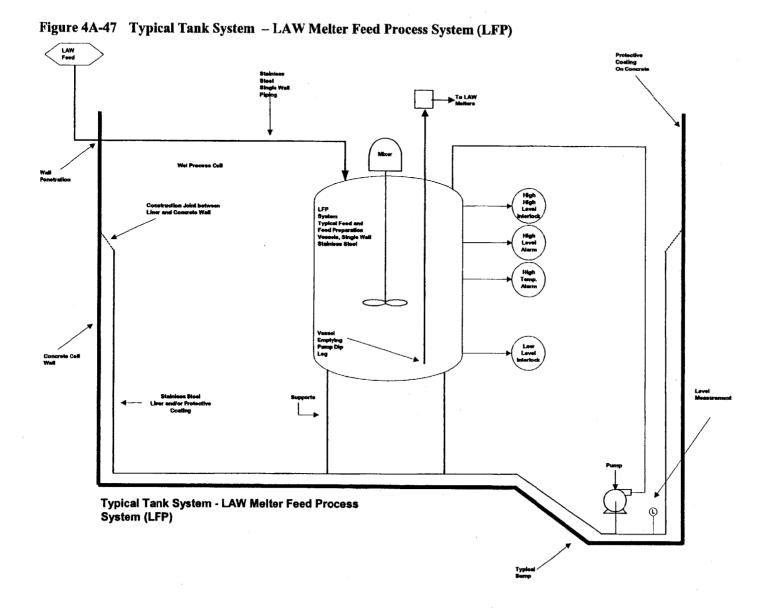


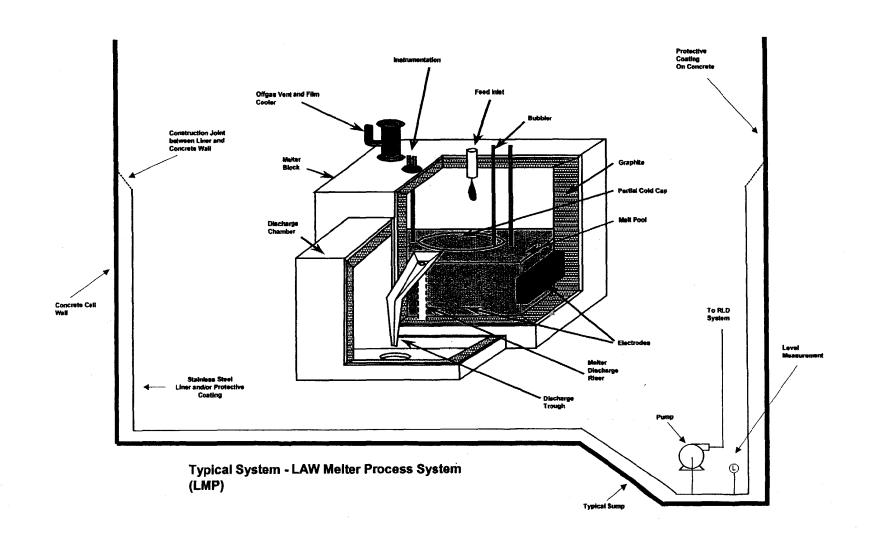
Figure 4A-45 Typical Tank System – Pretreatment Vessel Vent Process System (PVP)

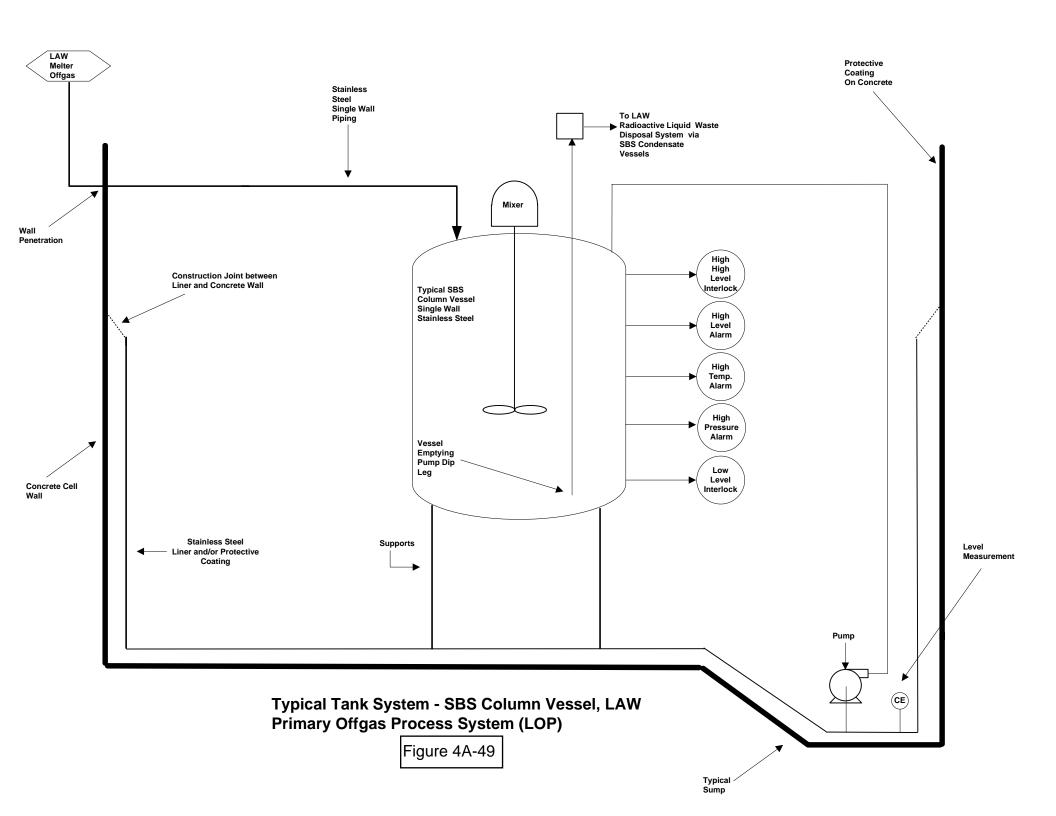
Figure 4A-46 Typical Tank System - LAW Concentrate Receipt Process System (LCP)

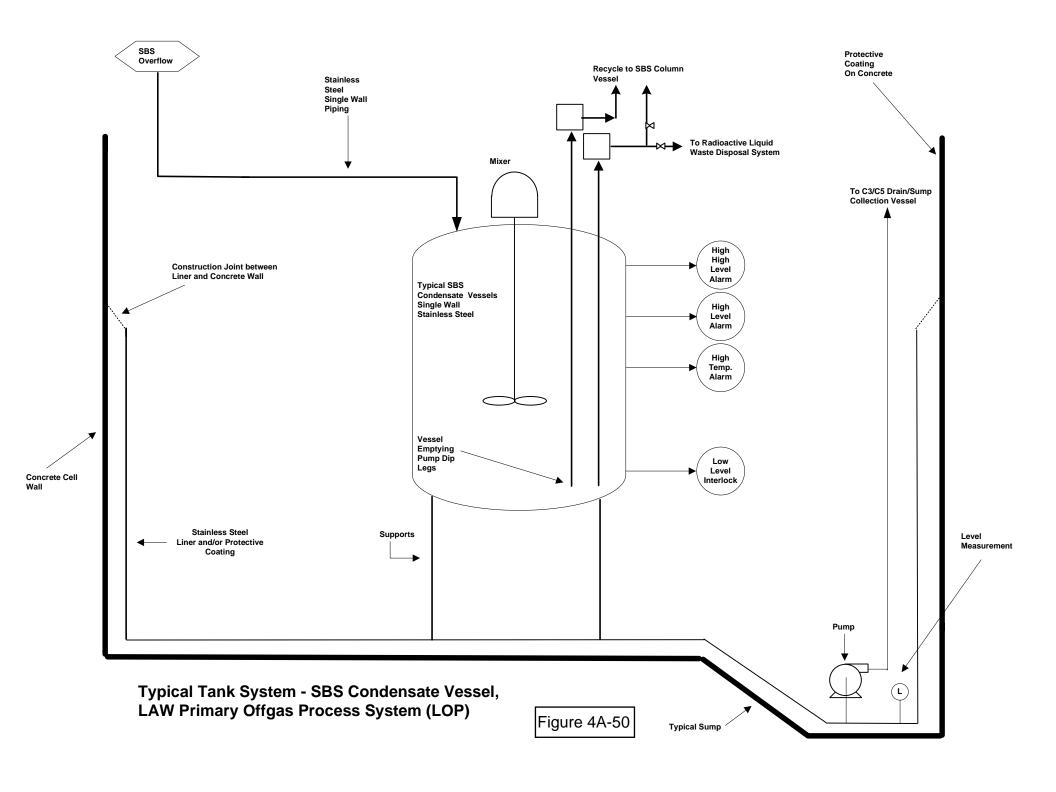


4A-52

Figure 4A-48 Typical System – LAW Melter Process System (LMP)







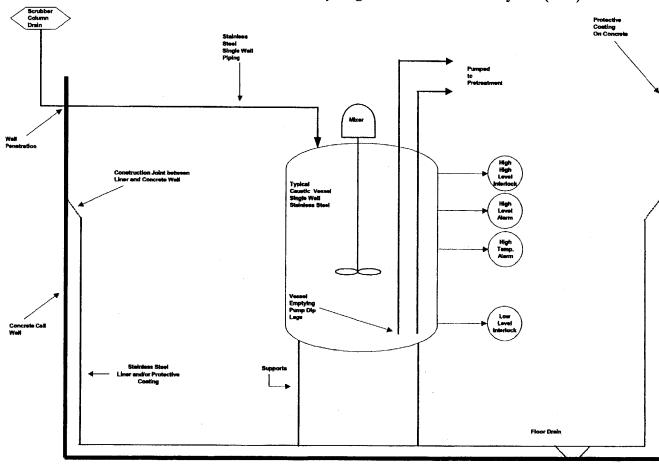


Figure 4A-51 Typical Tank System – LAW Secondary Offgas/Vessel Vent Process System (LVP)

Typical Tank System - LAW Secondary Offgas/Vessel Vent Process System (LVP)

To HLW RLD Sys Typical Tank System - HLW Cave Receipt Process System (HCP)

Figure 4A-52 Typical Tank System – HLW Cave Receipt Process System (HCP)

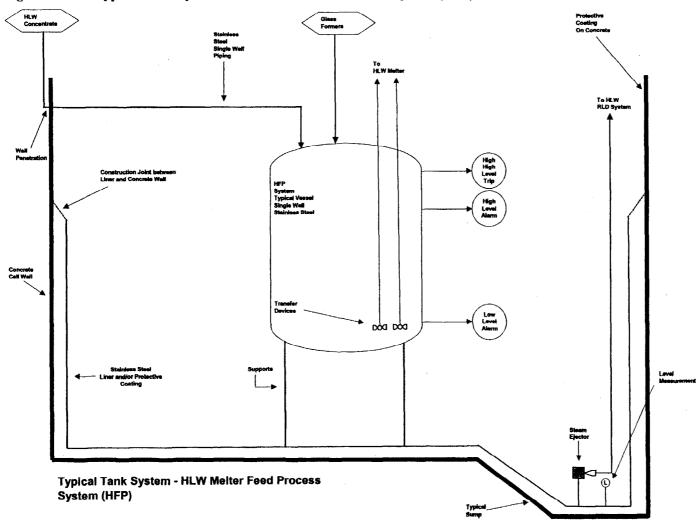
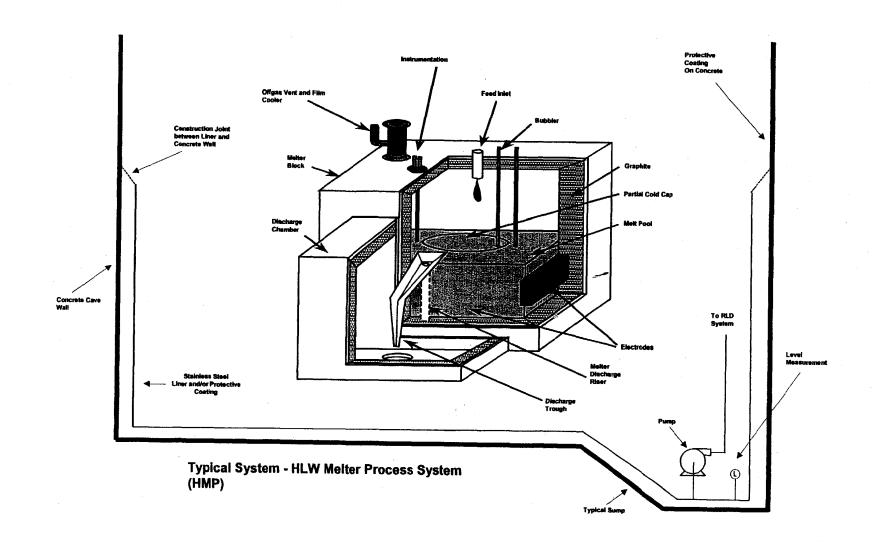
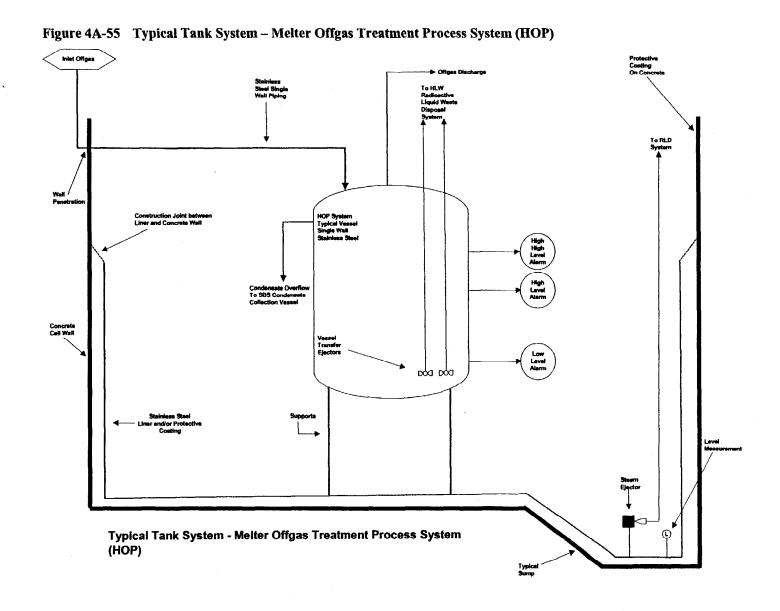


Figure 4A-53 Typical Tank System – HLW Melter Feed Process System (HFP)

Figure 4A-54 Typical System – HLW Melter Process System (HMP)





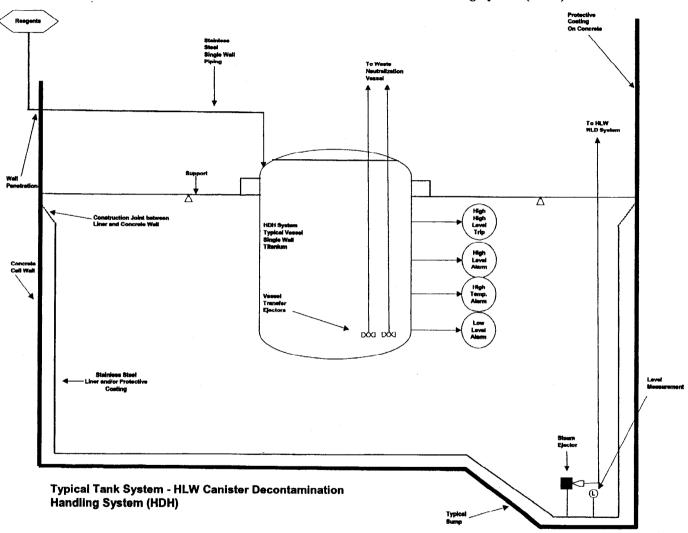


Figure 4A-56 Typical Tank System – HLW Canister Decontamination Handling System (HDH)

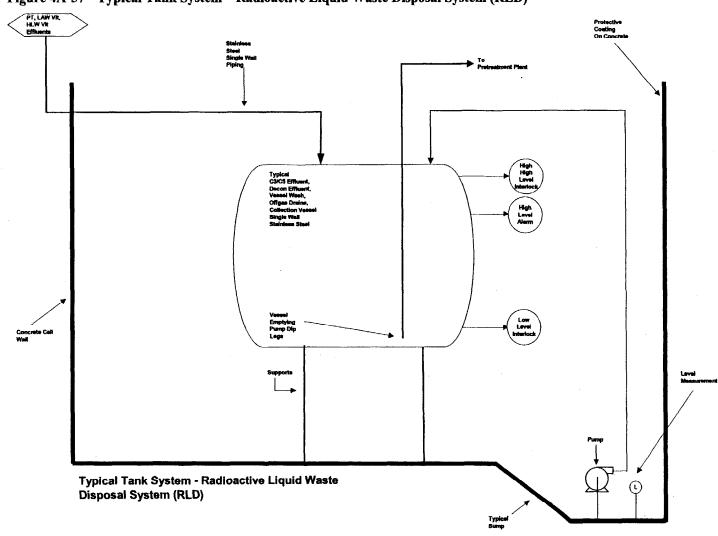


Figure 4A-57 Typical Tank System - Radioactive Liquid Waste Disposal System (RLD)

Roof, Sloped to Prevent Run On of Precipitation Typical System - Container Storage Building [Meats the requirement WAC 173-303-630(7)] Dangerous Was pH < 2 pH > 12.5 Lab Pack

Figure 4A-58 Typical System - BOF Container Storage Area

Figure 4A-59 Typical System – Containment Building (Sheet 1)

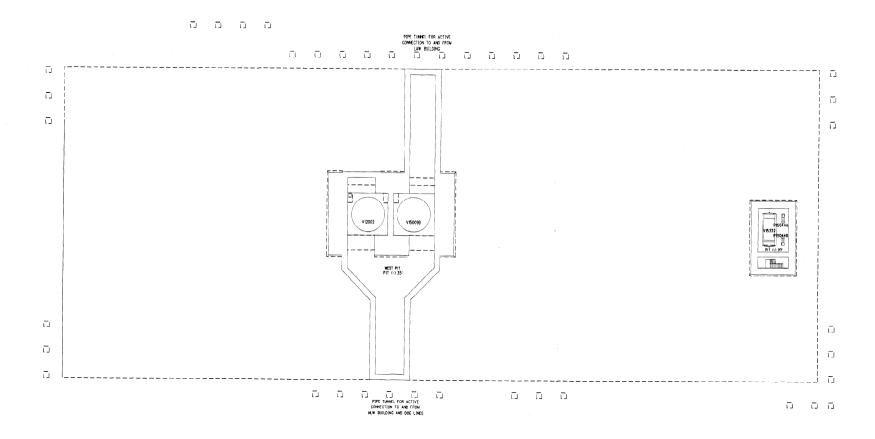
Typical System - Containment Building

Figure 4A-59 Typical System - Containment Building Typical Design Features Crosswalk (Sheet 2)

Containment Building	Shield	Negative Cell Air Pressure	Air Flow to HEPA Filters	SS Liner With Welded Seams	Decontaminateable Coating	Import / Export Hatch - (Controlled Air Gap)	Through Wall Drives - (Sealed)	Shield Windows - (Sealed)	Steel Reinforced Concrete Floor/Foundation	Steel Reinforced Concrete Walls & Ceilings	Through Wall MSMs - (Sealed)	In - Cell Bridge Crane / Monorail	Horiz./Vertical Shield Doors - (Controlled Air Gap)	Miscellaneous In-cell Room Equipment
Pretreatment Plant														
Pretreatment Hot Cell Containment Building	Х	Х	Х	Х	Х	X	Х	Х	Х	Х	Х	Х	Х	Х
Pretreatment Maintenance Containment Building	Х	X	Х	Х	Х	X	X	Х	X	Х	X	X	X	X
Pretreatment Air Filtration Containment Building	×	×	×	×					Х	X			Χ	X
LAW Vitrification Plant			,											
LAW LSM Gallery Containment Building		Х	х						Х	Х			Х	Х
ILAW Container Finishing Containment Building	х	Х	X		х	Х		Х	X	X	X	Х	Х	X
LAW Vit Plant C3 Workshop Containment Building	-	Х	×		X							X		
HLW Vitrification Plant														
HLW Melters No. 1 and 2 Containment Building	Х	Х	Х	Х		Х	Х	Х	Х	X	Х	Х	X	Х
IHLW Container Weld Containment Building	Х	Х	Х	Х		X	Х	Х	Х	X	Х	Х	Х	Х
IHLW Container Decontamination Containment Building	×	Х	Х	X		X	×	X	×	X	Х	×	X	
										-			Ĥ	-
HLW Vit Plant C3 Workshop Containment Building		Х	Х	Х	Х				Х	Х		Х		\Box
HLW Air Filtration Containment Building	Х	Х	Х		Х	Х			Х	Х			х	Х
HI W Drum Transfer Tunnel Containment Building	Ÿ	<u> </u>	<u> </u>			Ų.			Ų	Ų		Ų	Ţ	
HLW Drum Transfer Tunnel Containment Building	Х	Х	Х		X	Х			Х	X		Х	Х	

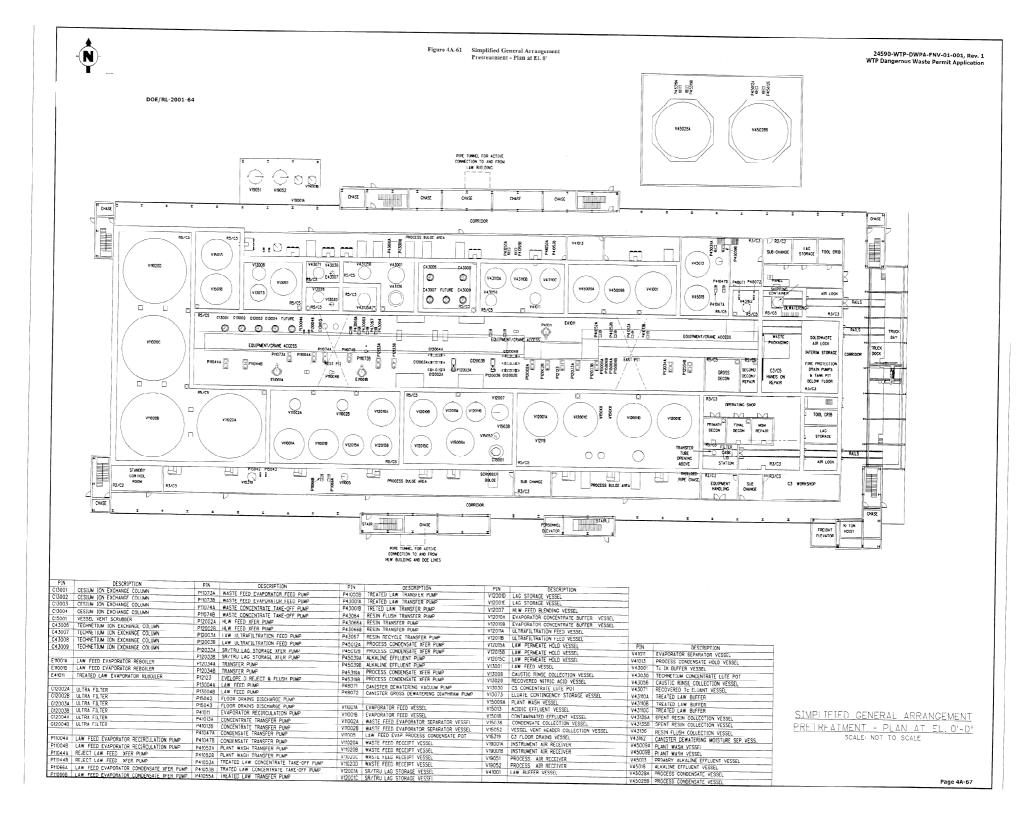


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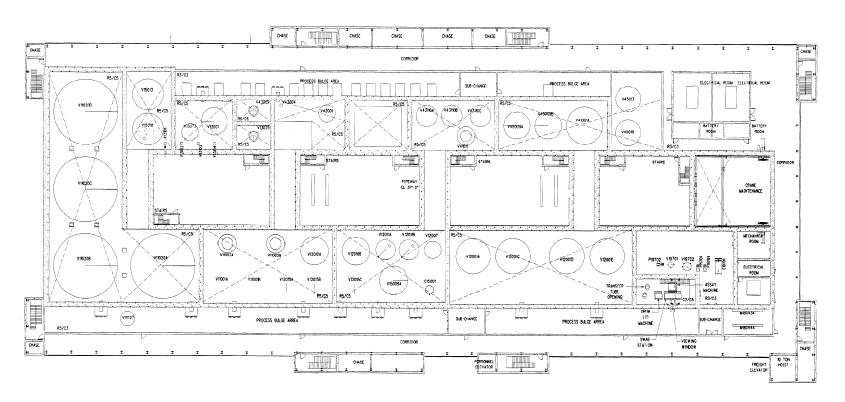
SIMPLIFIED GENERAL ARRANGEMENT
PRETREATMENT - PLAN AT EL. (-)41-0"
SCALE: NOT TO SCALE

V12002	HLW ACIDIC EFFLUENT HOLD VESSEL
V15009B	PLANT WASH VESSEL
V15322	FIRE WATER COLLECTION VESSEL
PI5044A	FIRE WATER COLLECTION TANK DISCHARGE PUMP
P150448	FIRE WATER COLLECTION TANK DISCHARGE PUMP
	V150098 V15322 PI5044A





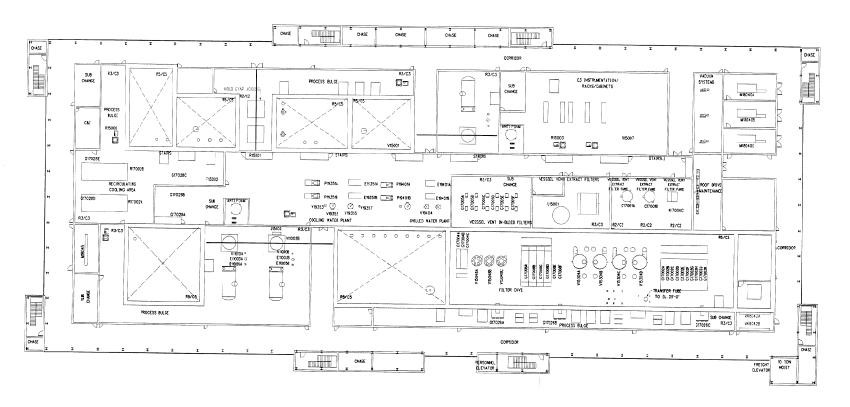




PIN	EQP NO.	DESCRIPTION	PIN	EOP NO.	DESCRIPTION
	C15001	VESSEL VENT SCRUBBER	7	V41011	EVAPORATOR VESSEL
	V11001A	LAW FEED EVAPORATOR FEED VESS.		V43001	TECHNETIUM ION EXCHANGE FEED BUFFER VESSEL "A
	V110016	LAW FEED EVAPORATOR FEED VESS.	٦	V4310A	TREATED LAW COLLECTION VESSEL "A"
	V11002A	EVAPORATOR RECIRCULATION VESSEL		V43110B	TREATED LAW COLLECTION VESSEL '8"
	V110028	EVAPORATOR RECIRCULATION VESSEL	1	V43110C	TREATED LAW COLLECTION VESSEL "C"
	VII020A	LAW RECEIPT VESSEL		V45009A	PLANT WASH VESSEL
	V11020B	LAW RECEIPT VESSEL		V450098	PLANT WASH VESSEL
••	V11020C	LAW RECEIPT VESSEL		V45013	PRIMARY ALKALINE EFFLUENT VESSEL
	V11020D	LAW RECEIPT VESSEL		V45018	SECONDARY ALKALINE EFFLUENT VESSEL
	V12001A	ENVELOPE OF RECEIPT VESSEL		V45028A	PROCESS CONCENSATE VESSEL "A"
	V12001C	ENVELOPE "D" RECEIPT VESSEL		V45028B	PROCESS CONDENSATE VESSEL 18"
	V12001D	ENVELOPE TO RECEIPT VESSEL			
	V12001E	ENVELOPE TO RECEIPT VESSEL			
	V12007	HLW FEED BLENDING VESSEL		E19701	NON-ACTIVE CONDENSATE HEAT EXCHANGER
	V12010A	EVAPORATOR CONCENTRATE BUFFER VESSEL		M18043A	MOTOR CONTROL CENTER
	V12010B	EVAPORATOR CONCENTRATE BUFFER VESSEL		MI8044A	MOTOR CONTROL CENTER
	V12011A	ULTRAFILTRATION FEED VESSEL	1	P19701	PUMP
	V1201fB	LL TRAFIL TRATION FEED VESSEL		P19701	PUMP
	V12015A	PERMEATE HOLD VESSEL		P19702	PUMP
	V120158	PERMEATE HOLD VESSEL		V11027	LINE FLUSH MAKE-UP VESSEL
	V12015C	PERWEATE HOLD VESSEL		V13026	EVAPORATOR KETTLE
	V13001	LAW FEED VESSEL		V13102	ION EXCHANGE PROCESS TANK
	V13073	CESIUM CONCENTRATE STORAGE VESSEL		V13103	ION EXCHANGE PROCESS TANK
	V15009A	PLANT WASH VESSEL		V13104	ION EXCHANGE PROCESS TANK
	V15013	ACIDIC EFFLUENT VESSEL	1	V19701	MON-ACTIVE CONDENSATE VESSEL
	V15018	CONTAMINATED EFFLUENT VESSEL		V19702	NON-ACTIVE LP CONDENSATE VESSEL
	V41001A	LAW DUFFER VESSEL 'A'	1	V43060	EVAPORATOR KETTLE

SIMPLIFIED GENERAL ARRANGEMENT PRETREAIMENT - PLAN AT EL. 28'-0" SCALE: NOT TO SCALE



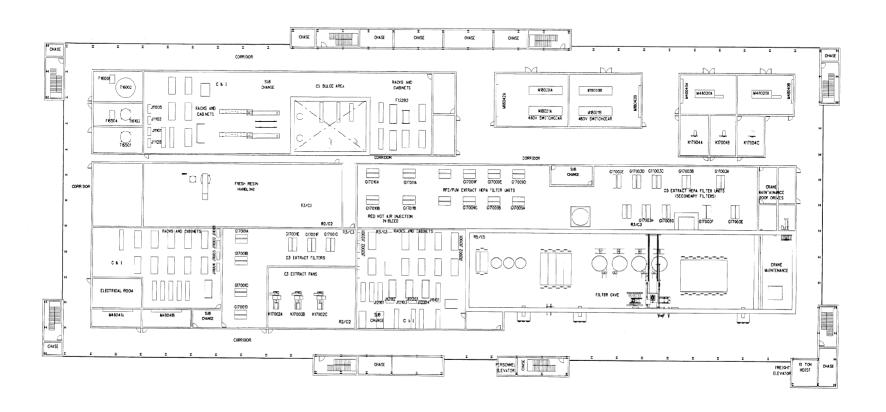


PIN	EQP NO.	DESCRIPTION	PIN	EQP NO.	DESCRIPTION	PIN		DESCRIPTION	PIN	EOP NC.	DESCRIPTION
**	C17001A	CARBON BEC FILTER		G17005A	PVV EXTRACT - SECONDARY HEPA FILTER		P19201A	VACUUM PUMP	FIR	V19352	
	0170018	CARBON BEC FILTER		G17005B	PVV EXTRACT - SECONDARY HEPA FILTER		P19201B	VACIUM PIMP	11-		AIR SEPARATOR
••	E11003A	LAW FEED EVAPORATOR AFTERCONDENSOR 'A'		017005C	PVV EXTRACT - SECONDARY HEPA FILTER		PI92CIC	VACUM PIMP	-	V19353	SECONDARY COOLING WATER CHEMICAL FEED TANK
	E110038	LAW FEED EVAPORATOR AFTERCONDENSOR 'B'	1	017005D	PVV EXTRACT - SECONDARY HEPA FILTER		P19351A	COOLING WATER DISTRIBUTION PUMP 'A'	1	V19355	CS PRIMARY COND COOLING WATER DELAY TANK
••	E11005A	LAW FEED EVAPORATOR INTERERCONDENSOR 'A'		017005E	PVV EXTRACT - SECONDARY HEPA FILTER		P19351B	COOKING WATER DISTRIBUTION PUMP '8'		V19357	CS COOLING WATER STORAGE DELAY TANK
	E11005B	LAW FEED EVAPORATOR INTERERCONDENSOR 'B'		017005F	PVV EXTRACT - SECONDARY HEPA FILTER		P19401A	CHILLED WATER DISTRIBUTION POLE 'A'	1	V19404	CESTUN TON EXCHANGER GROUP BELAY TANK
	E19351A			G17008A	PUV EXTRACT - PRIMARY HEPA FILTER	-	P19401B	CHILLED WATER DISTRIBUTION PUMP 'B'	1		**
	E193518		1	¢170088	PUV EXTRACT - PRIMARY HEPA FILTER		R15001	AIR COOLER	1		
	E19401A			G17008C	PUV EXTRAC" - PRIMARY HEPA FILTER		RI5003	AIR COOLER	-		
	E1940/B			C17008D	PUV EXTRAC" - PRIMARY HEPA FILTER		R15003	AIR COOLER			
	F13282	CESIUM FRESH RESIN BULGE		C170(8E	PUV EXTRAC" - PRIMARY HEPA FILTER	-	R15307	AIR COOLER	_	**	**
	G17002A	C5 EXTRACT - PRIMARY HEPA FILTER	1.	C170C8F	PJV EXTRACT - PRIMARY HEPA FILTER		R173024		-		
**	C170028	CS EXTRACT - PRIMARY HEPA FILTER	-	G17026A	FILTER CAVE IN-BLEED		R173028	RECIRCULATING AIR COOLER			
	C17002C	C5 EXTRACT - PRIMARY HEPA FILTER		G17026B	FILTER CAVE IN-BLEED		U15001	RECIRCULATING AIR COOLER			
	G17002D	C5 EXTRACT - FRIMARY HEPA FILTER	1	617026C	FILTER CAVE IN-BLEED	- 1::-	V1010A				
	G17002E	C5 EXTRACT - PRIMARY HEPA FILTER	1	G17028A	WASTE PACKAGING IN-BLEED		VINICA	••			
	G17002F	C5 EXTRACT - PRIMARY HEPA FILTER	11	G170298							
	G17002G	C5 EXTRACT - PRIMARY HEPA FILTER		G170230	WASTE PACKAGING IN-BLEED	-+	V10028	WASTE FEED EVAPORATOR SEPERATOR VESSEL		**	**
	G17002H	CS EXTRACT - PRIMARY HEPA FILTER		G170230	WASTE PACKIGING IN-BLEED		V15001	PLANT WASH BREAMPOT			
	G 7002J	C5 EXTRACT - PRIMARY HEPA FILTER	1	G17023E	WASTE PACKAGING IN-BLEED		V15048A	HEME VESSEL VENT. SYSTEM			
	G:7002K	C5 EXTRACT - PRIMARY HEPA FILTER		J/5102	WASTE PACKAGING IN-BLEED		V150488	HEME VESSEL YENT SYSTEM			
	G17004A	PVV EXTRACT - PRIMARY HEFA FILTER					V15048C	HEME VESSEL VENT SYSTEM			
	G17004B	PVV EXTRACT - PRIMARY HEFA FILTER	-	M8040A	480Y SWITCHGEAR UNIT		V15304A	HEME RFD/PUM SYSTEM			
	G17004C	PVV EXTRACT - PRIMARY HEFA FILTER		M80406	480Y SWITCHGEAR UNIT		V153048	HEME REDIPUM SYSTEM	h	**	
	07/00-0	PAN EXIMACI - PRIMART HEFA FILTER		M'8040C	480Y SYITCHGEAR UNIT		V15304C	HEME REDIPUM SYSTEM			
				M'8045	MOTOR CONTROL CENTER	7	V15304D	HOME RED/PUM SYSTEM		**	
+				M18047A	MOTOR CONTROL CENTER	1					
_			1	M18042B	MOTOR CONTROL CENTER				-		

SIMPLIFIED GENERAL ARRANGEMENT
PRETREATMENT - PLAN AT EL. 56'-0"
SCALE: NOT TO SCALE



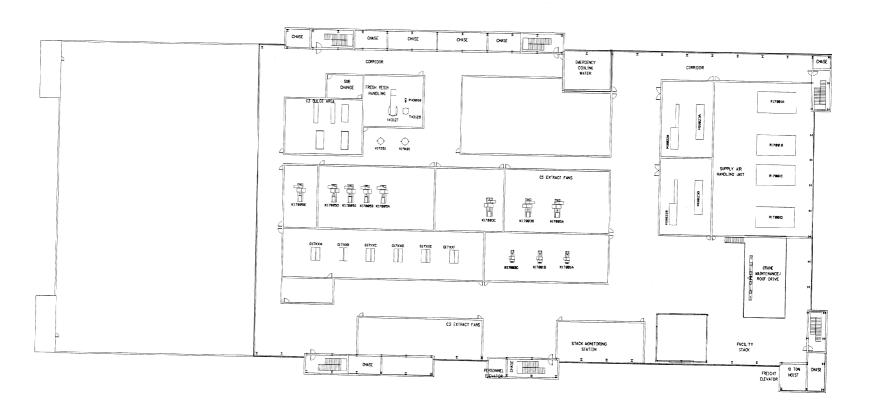
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PIN	EQP NO.	DESCRIPTION	PIN		DESCRIPTION	PIN	EQF NO.	DESCRIPTION DESCRIPTION	PIN	EQP NO.	DESCRIPTION
	E13001	DVERHEAD RECTIFIER CONDENSER		G170090	PUV EXTRACT - SECONDARY HEPA FILTER		K170020	C3 EXTRACT FAN	1,11		**
	E13002	AFTERCONDENSER	ــنــا ل	G1700\$E	PUV EXTRACT - SECONDARY HEPA FILTER		K17C04A	VESSEL VENT EXTRACT FAN			
<u></u>	E43005	TECHNETIUM HITRIC ACID CONDENSER		C1700\$F	PUV EXTRACT - SECONDARY HEPA FILTER	-	K17004B	VESSE, VENT EXTRACT FAN	1	**	
	E4300f	AF TERCONDENSER		G170104	PJV IN-BLEED HEPA FILTER		K17004C	VESSE, VENT EXTRACT FAN	-		
••	F16008	SLMF		G170103	INLE1 FILTER, HOT AJR	**	M18C2OA	480v SWITCHGEAR JNIT	-	**	
<u> </u>	F16008	\$UMP		G77011A	PJV IN-BLEED HEPA FILTER	1	M18C20B	480v SWITCHCEAR UNIT	-		
	F16504	SUMP		G170116	OUTLET FILTER, HOT AIR	1-	M18C21A	480v SWITCHGEAR UNIT	1		
	F13282	SLMP	1	JI'001	INSTRUMENT BOX	-	M18C218	480v SWITCHGEAR UNIT	-		
	G170014	23 EXTRACT HEPA FILTER		JT002	INSTRUMENT BOX		M18C42A	LOAD CELLS	1	**	
	G17001E	C3 EXTRACT HEPA FILTER	1	J11003	INSTRUMENT BOX	-	M18C42B	LOAD CELLS	-		
	G170010	C3 EXTRACT HEPA FILTER	1	J1'004	INSTRUMENT BOX		M48020A	LOAD CELLS	-		
**	G170016	C3 EXTRACT HEPA FILTER		J1005	INSTRUMENT BOX		M48020B	LOAD CELLS	-		
	G17001E	C3 EXTRACT HEPA FILTER]	J11101	INSTRUMENT BOX		M48041A	LOAD CELLS			
	G1700#	03 EXTRACT HEPA FILTER	-	J11102	INSTRUMENT BOX		M48041B	LOAD DELLS			
	G170010	C3 EXTRACT HEPA FILTER		J11128		+	M48042A	LOAD DELLS	_		
••	G17001H	C3 EXTRACT HEPA FILTER		J12001	TRANSDUCER PANEL		M48042B	LOAD CELLS	1		
	C170C3A	C5 EXTRACT - SECONDARY HEPA FILTER		J12002	TRANSDUCER PANEL		T16002	C.SM NITRIC NOID HEAD TANK			
	C170038	C5 EXTRACT - SECONDARY HEPA FILTER	1	J12101	INSTRUMENT BOX		T16103	C.IM SODILM HYDROXIDE HEAD TANK	-		
	C170030	C5 EXTRACT - SECONDARY HEPA FILTER		J12102	INSTRUMENT BOX	1	T16501	CEMINERAL ZED WATER HEAD TANK			71
	C170030	C5 EKTRACT - SECONDARY HEPA FILTER		J12103	INSTRUMENT BOX	1	V13125	FRESH CESIUM RESIN ADDITION TANK	-		
	C17003X	C5 EXTRACT - SECONDARY HEPA FITER	1	J12201	INSTRUMENT BOX		**	THESH CESION RESIDENDETTON LAND			
	G17003F	C5 EXTRACT - SECONCARY HEPA FILTER	1	J12202	INSTRUMENT BOX	+			1		
	G170030	C5 EXTRACT - SECONDARY HEPA FILTER	1	J12203	INSTRUMENT BOX	+					**
	C17003H	C5 EXTRACT - SECONDARY HEPA FILTER	1	J12204	INSTRUMENT BOX	+					
	C170091	FUV EXTRACT - SECONDARY HEPA FILTER	11	J15101	INSTRUMENT BOX						
	G170098	FUV EXTRACT - SECONDARY HEPA FILTER	1	K170021	C3 EXTRACT FAN		·				
		FUV EXTRACT - SECONDARY HEPA FILTER	1	K170028	C3 EXTRACT FAN	-	l		1		

SIMPLIFIED GENERAL ARRANGEMENT
PRETREATMENT - PLAN AT EL. 77'-0'
SCALE: NOT TO SCALE





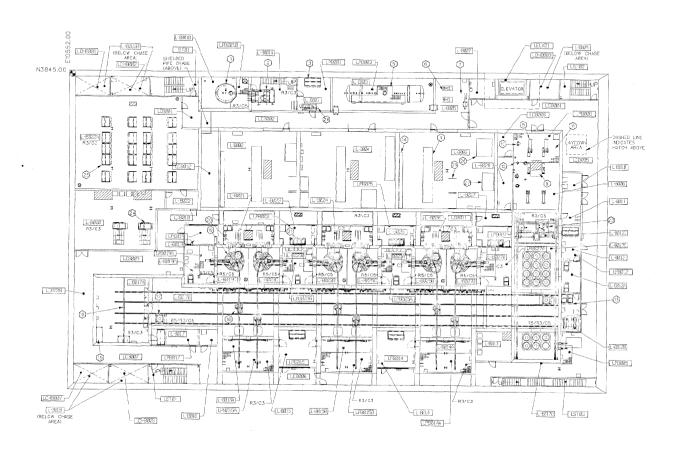
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_		C2 HEPA FILTER	1	V19351	COOLING WATER EXPANSION TANK
	G17KXB	C2 HEPA FILTER		V19401	CHILLED WATER EXPANSION TANK
	GI7CCC	C2 HEPA FILTER		V43127	ESCOL TECHNOLOGY PRODUCTION
	G17.CXD	C2 HEPA FILTER	1	140127	FRESH TECHNETIUM RESIN OVERFLOW TANK
	G17.KXE	C2 HEPA FILTER	1		
	G17XXF	C2 HEPA FILTER	11		
	K17001A	C2 EXTRACT FANS	1		
**	K170018	C2 EXTRACT FANS	1		
	K17001C	C2 EXTRACT FANS	1		
	K17003A	C5 EXTRACT FANS	1		
	K170038	CS EXTRACT FANS			
]	K17003C	CS EXTRACT FANS			
	K17(05A	PJV EXTRACT FANS	-		
	K17005B	PJV EXTRACT FANS			
	K17005C	PJV EXTRACT FANS	-		
	K17005D	PUV EXTRACT TANS	-		
	K17005E	PAV EXTRACT TANS	1		
	M18022A	MOTOR CONTROL CENTER	1		
	M18022B	MOTOR CONTROL CENTER	1		
	W1802.3A	MOTOR CONTROL CENTER	1		
	W18023B	MOTOR CONTROL CENTER	11:1		
	P43060	OVERFLOW RECYCLE PLMP	1		
	R17001A	C2 SUPPLY - AIR HANDLING PLANT	1		
	R170016	C2 SUPPLY - AIR HANDLING PLANT	1		
- 7	R17001C	C2 SUPPLY - AIR FANDLING PLANT	1		
	R170010	C2 SUPPLY - AIR HANDLING PLANT	1		
.	143128	FRESH TECHNETIUM RESIN OVERFLOW TANK	1		

SIMPLIFIED GENERAL ARRANGEMENT PRETREATMENT - PLAN AT EL. 98'-0"
SCALE: NOT TO SCALE

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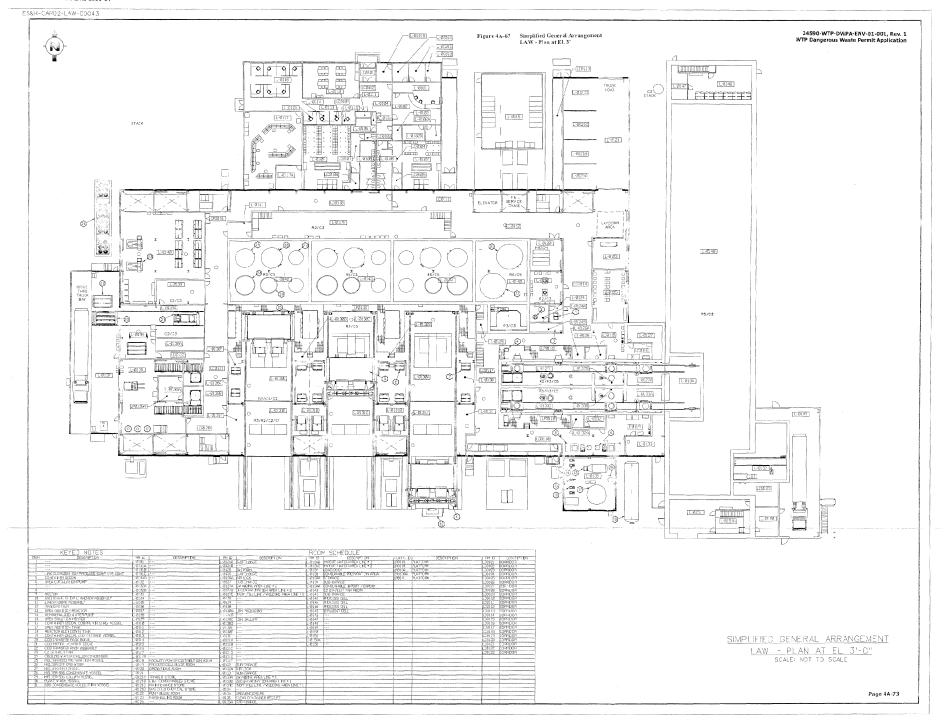
Figure 4A-66 Simplified General Arrangement LAW - Plan at El. -21'

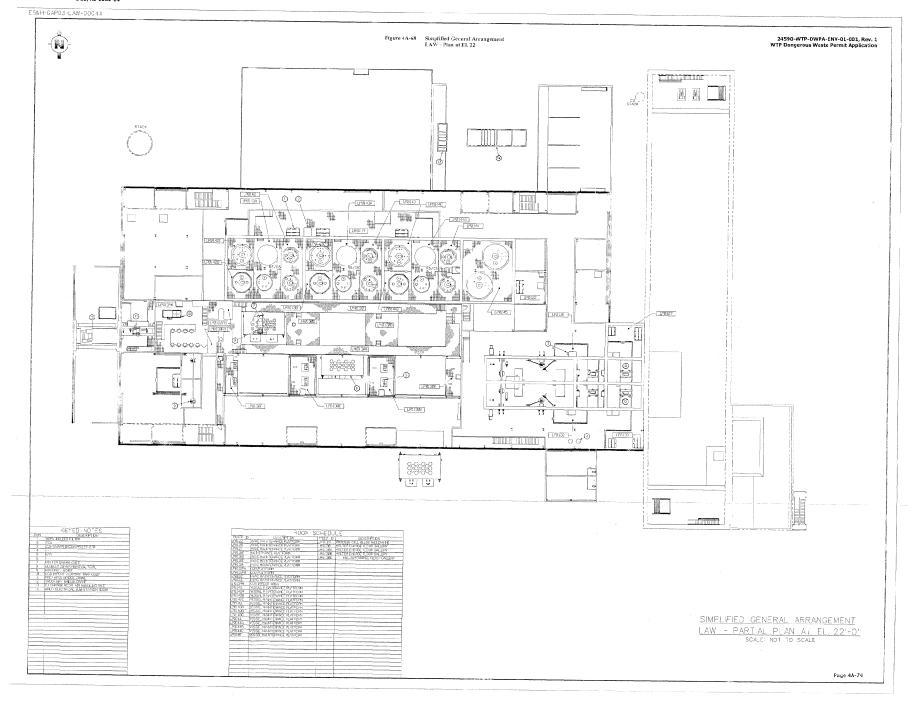


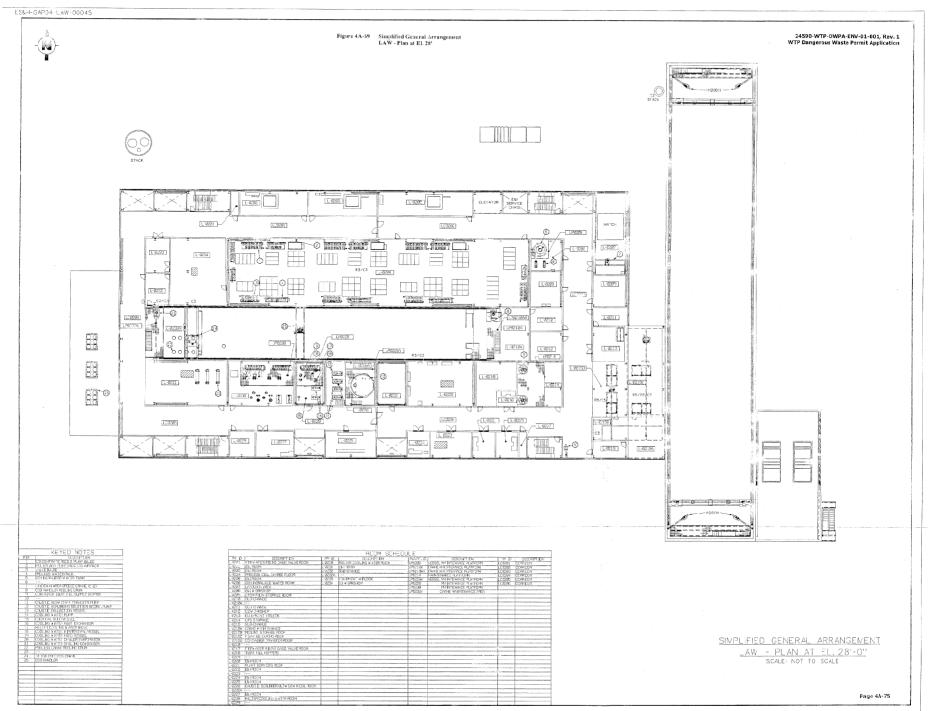
	ITEM NUMBERS
ITEN	GESCRPT LIN
_ 1	D3/C5 DRVIN/RUMP COLLECT ON VESSEL
S	D3/C5 DRAIN EFFICIENT RUMF BLADE
3	HEPA NIKEED FILTERHOUSINGS
- 4	AC POW DEGURERY NPDE 193 KV
5	CLICE DRIVING COLLECT DN TANK
- 6	CLACE DIVEN COLLECTION PUMP
. 7	CARGER FOSTING FOCILITY
. 8	CHILLED WATER HEAT EXCHANGER
9	CHILLED WATER PURPS
10	CHILCO VATER HEAD VESSEL
11	CHILLED MATERIAL REMOVAL VESSEL.
12	IDHILLD VATER CHEMICAL FED VESSE.
13	CONTAINER DECONTAM HAT EN VACUUM PLAF
14	HENMICE
15	BOOK MANT, FACELTY SUFFERT TRAVE
16	DUDE MANY, FACILITY 40NORAL HOST
17	PRODUCT CONTAINUE RANSPORT BOGIE
18	POURCAME MONDRUL HOIST
19	POUR CAME CONTAINER TURNIFABLE
20	FOUTCAVE CONTA ALR SLEVATOR
21	RELITER BUCK, CLYB. Y ATER MICK
22	PRODUCT CONTAINER TRANSPORT BODE
_23	BLFFOR STORE CRONS
24	C5 EXTRACT FRAME HALIST FAN
-20	(35 STACK EXHAUST FILTER HOUS NO
26	13.8KV SW TIC: GEAR
27	COCS CALL PRICESS WATER AND

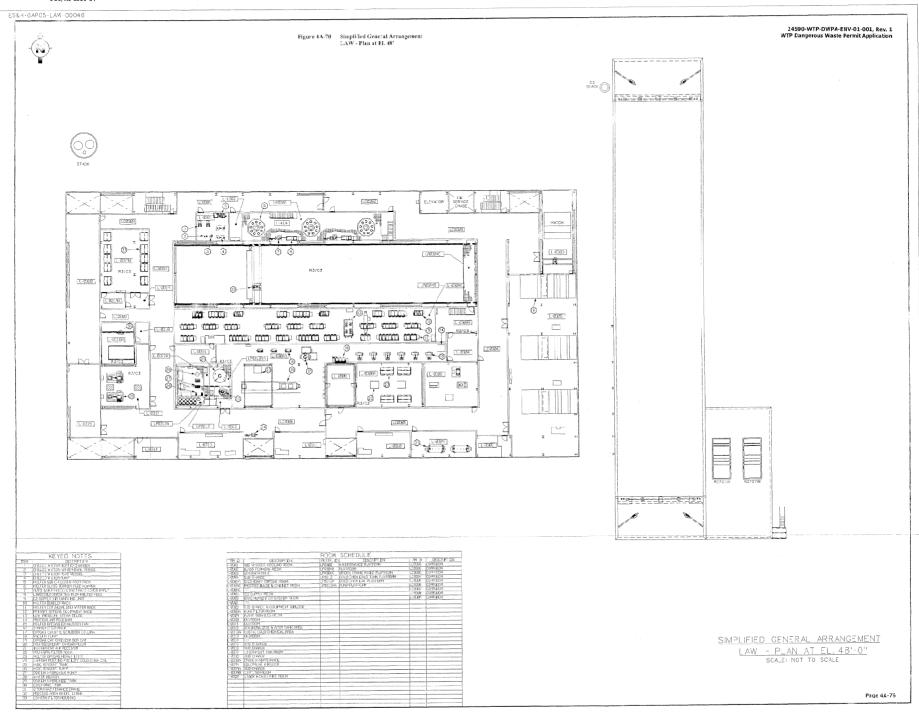
স চ	DESCRIPTION		ROO		EDULE		
	SIR-CONFE	PMD	SECIENT	PLATE.		(FR 3)	DESCRIPTUR
	PLANE BILDE SOOM			T56/81	MAINTANENCE PLATFOR: CL 1: 8110"	[LCB00]	CORREDOR
7777	CCCSTANTANCITI	1.434 36	FJUN CANF A PLOCK	[PB00]	MARTENING PLATFORMEL 1-111-19"	LCRAE	CORREGE
	CM POY DESUPPLY ROOM	L.BE. B	POUR CAVE	LPEXOLE	PAR LAWIC PARTIE EL. I-17-41	[C3650]	CORRIDOR
10.72	CC2CONTONINT	1.4628	CS EXHAUST FAN HOOM MECHANICAL FOOM	LPBASS LPBASS	CLAS DRIAS COLLECTION TWIK PLATFORM	LC3653	CORRECT
3333	LOW HOW OT SUPPLY HODGY	12001	ALLIANILAL HUUM		CONTAINER OF STATION PLATFORM EL. (+ he'-6"	LCXX35	CORRIDOR
177/07	CMCC DANN COLLECTION STARP MEN	7.48655	SUB CHAPGE	UFBROE	HADJEWNCER ATHORN ET (-311,-6.	LC3006	CHREDOR
6305	LEM POWER DEPAY BYON		CS FLICTROP	JP9012	HANTONINCEPLATFORM SL. 1- 1011-97	LC3007	CORPERIOR
	FAIRDIN		OFFRARE BELOV CHASE			TC3908	MORR DOR
		1.19023	ENTATEA	JP90144	MUTCHAL MAINTENANCE PLATFORM EL. 1-17-6"	1.03439	6.07RTOR
B008	STS FOX OR SUPPLY COCLING ROCK	L B0239	PULP CAVE AIR LOCK	JP8315		103010	COFFEEDER
-B001	E& HOLH	F-B6533	POUR CAVE	UP80150	MOROPOL HANTENING PLATFORM EL. (*1718)	11030111	ICCERTOR.
	ESTRICH		AGUP CAVE	RP90150	MUNDHAIL HANTENNICE PLATFORM E., (-1710)	L08012	CUPRIOR
	LOOPHING APLICK	1 H294	MECHANICAL ROOM	LP8617		LCHRON.	CHEST
-06.5	SUS-C-WINGE	1.825	BIREA	UP9019	DE MONTENNICE RATFORM 1. CR152F	LCER002	CHOSE
.02120	DECONFETER POOR	F-8352V	FOUR DAVE AR LUCK	1,68494	VIEW INCIPLATIONMEL, I- 1/2*9*	ILD-Boxs	CHOSE
-63139	DEDON FAN RODM		FOUR CAVE	L79823	HANTENINGERATIDING 111-8*	LUHJAA	
	DUEDR CROVE HAT INTERVACE	L-DRESC	HUUF CAVE	188234	VEVICEATION EL. (-112-9)	CHEEN	
	30000	1.385	MECHANICAL HOOM	LFB225	HAMTENACE BATTORNEL, - 111-8"	FIVE	D TV 10R
	SLE CHART	-3027	%] #EA	THE S	VEVING RATIOPN EL. (-)(2/9)	100.	-
.00144	HONORIA MAINTERNOS	L-0827A	FOUR CAVE A IF LDCK	LPB027	KANTENANCE LATFORN E., - 191-9"	-	-
	SIB FWICE	L-68278	FOLE CAVE	UPB027A	VEVING RATIOPHEL. (-)12/9*	-	
.00154	MONORY I, MAINTENANCE	L-6653	EUB-CHANGE				
	PONDAY E MARTEKANDS		STARVAY			_	
	DIS 5 PAUL		STARYAY			-	+
B817	SUS-CHANGE	ISI03	STATEVAY			-	
	STOP HANT WANTE	STOL	STARWAY			-	+
-38178	CONTAINER IMMSTER CO-BUCH					-	
-301 X	CONTAINER BUFFEF STORE					-	
-36:70	CINTANER FEW OFK					-	+

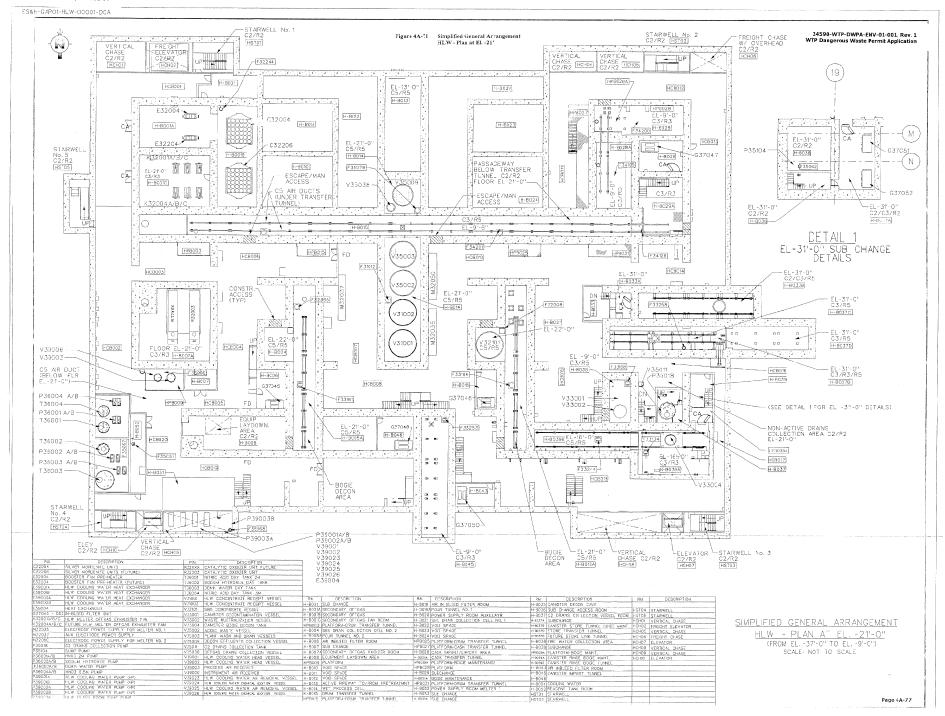
SIMPLIFIED GENERAL ARRANGEMENT LAW - PLAN AT EL. -21'-0'' SCALE: NOT TO SCALE







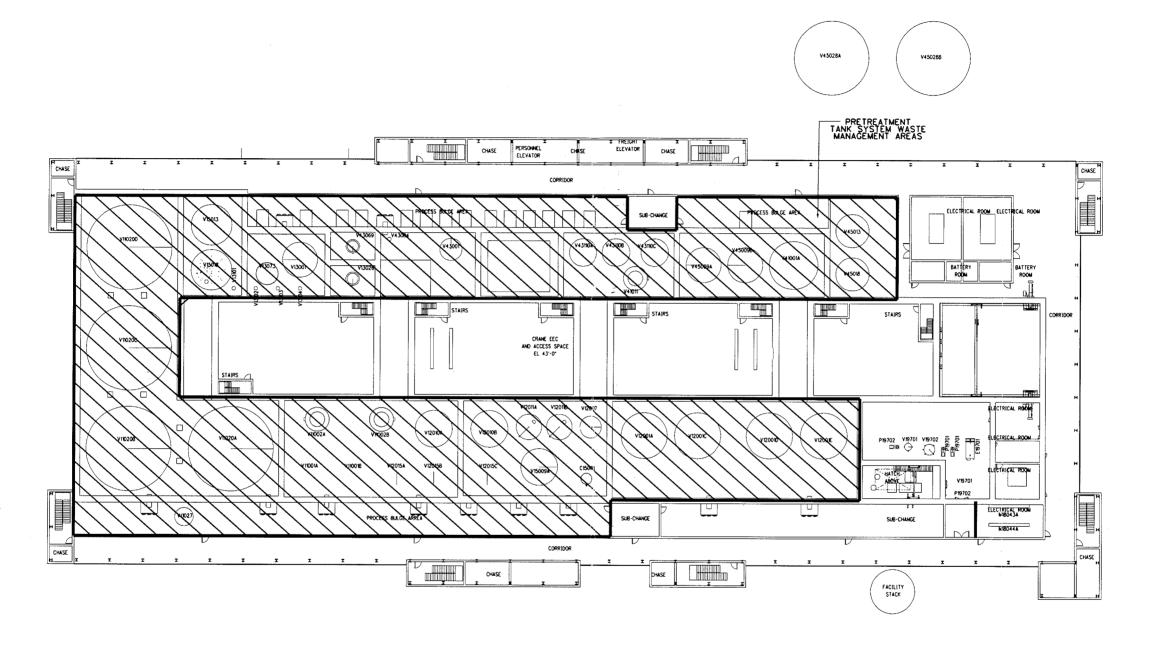




	←		1 114	DESCRIPTION	1 111	DESCRIPTION	1	
	P11073A	WASTE FEED EVAPORATOR FEED PUMP	P410558	TREATED LAW TRANSFER PUMP	V12001D	LAG STORAGE VESSEL	1	
	P11073B	WASTE FEED EVAPORATOR FEED PUMP	P43001A	TREATED LAW TRANSFER PUMP	V12001E	LAG STORAGE VESSEL	1	
	P11074A	WASTE CONCENTRATE TAKE-OFF PUMP	P43001B	TRETED LAW TRANSFER PUMP	V12007	HLW FEED BLENDING VESSEL	1	
	P11074B	WASTE CONCENTRATE TAKE-OFF PUMP	P43064	RESIN FLUSH TRANSFER PUMP			1	
	P12002A	HLW FEED XFER PUMP	P43066A	RESIN TRANSFER PUMP			1	
	P12002B	HLW FEED XFER PUMP	P430668	RESIN TRANSFER PUMP			1	
	P12003A	LAW ULTRAFILTRATION FEED PUMP	P43067	RESIN RECYCLE TRANSFER PUMP	V120118	ULTRAFILTRATION FEED VESSEL	1	
	P12003B	LAW ULTRAFILTRATION FEED PUMP	P45012A	PROCESS CONDENSATE XFER PUMP			PÍN	DESCRIPTION
TECHNETIUM ION EXCHANGE COLUMN								EVAPORATOR SEPARATOR VESSEL
			P45039A	ALKALINE EFFLUENT PUMP			+	PROCESS CONDENSATE HOLD VESSEL
	P12034A	TRANSFER PUMP	P450398	ALKALINE EFFLUENT PUMP			_	
LAW FEED EVAPORATOR REBOILER	P12034B	TRANSFER PUMP	P45319A	PROCESS CONDENSATE XFER PUMP	V13008			
TREATED LAW EVAPORATOR REBOILER	P12123	EVELOPE D REJECT & FLUSH PUMP	P45319B	PROCESS CONDENSATE XFER PUMP				CAUSTIC RINSE COLLECTION VESSEL
			P48071	CANISTER DEWATERING VACUUM PUMP				RECOVERED To ELUANT VESSEL
ULTRA FILTER	P13004B	LAW FEED PUMP						
	P15042	FLOOR DRAINS DISCHARGE PUMP						
	P15043	FLOOR DRAINS DISCHARGE PUMP	V11001A	EVAPORATOR FEED VESSEL				TREATED LAW BUFFER
	P41011	EVAPORATOR RECIRCULATION PUMP	V11001B	EVAPORATOR FEED VESSEL				SPENT RESIN COLLECTION VESSEL
	P41013A	CONCENTRATE TRANSFER PUMP	V11002A	WASTE FEED EVAPORATOR SEPARATOR VESSEL				SPENT RESIN COLLECTION VESSEL
ULTRA FILTER								RESIN FLUSH COLLECTION VESSEL
	P41047A	CONDENSATE TRANSFER PUMP						
LAW FEED EVAPORATOR RECIRCULATION PUMP	P410478	CONDENSATE TRANSFER PUMP						PLANT WASH VESSEL
LAW FEED EVAPORATOR RECIRCULATION PUMP	P41052A	PLANT WASH TRANSFER PUMP					V450098	PLANT WASH VESSEL
REJECT LAW FEED XFER PUMP	P41052B	PLANT WASH TRANSFER PUMP					V45013	PRIMARY ALKALINE EFFLUENT VESSEL
REJECT LAW FEED XFER PUMP	P41053A	TREATED LAW CONCENTRATE TAKE-OFF PUMP						ALKALINE EFFLUENT VESSEL
LAW FEED EVAPORATOR CONDENSATE XFER PUMP	P41053B	TRATED LAW CONCENTRATE TAKE-OFF PUMP						PROCESS CONDENSATE VESSEL
LAW EFED EVAPORATOR CONDENSATE YEER PHAR	P41055A	TREATED LAW TRANSFER PHMP			1 201			PROCESS CONDENSATE VESSEL
	ULTRA FILTER LAW FEED EVAPORATOR RECIRCULATION PUMP LAW FEED EVAPORATOR RECIRCULATION PUMP REJECT LAW FEED XFER PUMP REJECT LAW FEED XFER PUMP REJECT LAW FEED EVAPORATOR CONDENSATE XFER PUMP	CESIUM ION EXCHANGE COLUMN P10738	CESIUM ION EXCHANGE COLUMN PI073B WASTE FEED EVAPORATOR FEED PUMP CESUM ION EXCHANGE COLUMN PI074A WASTE CONCENTRATE TAKE-OFF PUMP PI074B WASTE CONCENTRATE TAKE-OFF PUMP PI074B WASTE CONCENTRATE TAKE-OFF PUMP VESSEL VENT SCRUBBER PI2002A HLW FEED XFER PUMP PI2003A HLW FEED XFER PUMP PI2003B SEX/TRU LAG STORAGE XFER PUMP PI2003B TRANSFER PUMP PI3004A LAW FEED PUMP PI3004B TAW FEED PUM	CESTUM ION EXCHANGE COLUMN P1073B WASTE FEED EVAPORATOR FEED PUMP P4300IA CESIUM ION EXCHANGE COLUMN P1074A WASTE CONCENTRATE TAKE-OFF PUMP P4300B CESIUM ION EXCHANGE COLUMN P1074B WASTE CONCENTRATE TAKE-OFF PUMP P4300B VESSEL VENT SCRUBBER P12002A HLW FEED XFER PUMP P43066A VESSEL VENT SCRUBBER P12002A HLW FEED XFER PUMP P43066A TECHWETUM ION EXCHANGE COLUMN P12003B LAW ULTRAFILITRATION FEED PUMP P43067 TECHWETIUM ION EXCHANGE COLUMN P12003B LAW ULTRAFILITRATION FEED PUMP P45012A TECHWETIUM ION EXCHANGE COLUMN P12033B SR./TRU LAG STORAGE KFER PUMP P45012A LAW FEED EVAPORATOR REBOILER P12033B SR./TRU LAG STORAGE KFER PUMP P45012B LAW FEED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45319B LAW FEED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45319B ULTRA FILTER P13004B LAW FEED PUMP P45319B ULTRA FILTER P13004B LAW FEED PUMP P48072 ULTRA FILTER P41011B	CESIUM ION EXCHANGE COLUMN PI1073A WASTE FEED EVAPORATOR FEED PUMP P43058 TREATED LAW TRANSFER PUMP CESIUM ION EXCHANGE COLUMN PI1074B WASTE FEED EVAPORATOR FEED PUMP P43001A TREATED LAW TRANSFER PUMP CESIUM ION EXCHANGE COLUMN PI1074B WASTE CONCENTRATE TAKE-OFF PUMP P43001A TREATED LAW TRANSFER PUMP CESIUM ION EXCHANGE COLUMN PI1074B WASTE CONCENTRATE TAKE-OFF PUMP P43064 RESIN FREITED LAW TRANSFER PUMP CESIUM ION EXCHANGE COLUMN P12002B HLW FEED XERR PUMP P43066A RESIN TRANSFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12002B HLW FEED XERR PUMP P43066A RESIN TRANSFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12003B LAW ULTRAFILITRATION FEED PUMP P43066 RESIN TRANSFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12003B LAW ULTRAFILITRATION FEED PUMP P43067 RESIN RECYCLE TRANSFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12003B LAW ULTRAFILITRATION FEED PUMP P45012A PROCESS CONDENSATE XFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12003B SR/TRU LAG STORAGE XFER PUMP P45012B PROCESS CONDENSATE XFER PUMP TECHNETIUM ION EXCHANGE COLUMN P12033B SR/TRU LAG STORAGE XFER PUMP P45039B ALKALINE EFFLUENT PUMP LAW FEED EVAPORATOR REBOILER P12034A TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP LAW FEED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED LAW EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED LAW EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED LAW EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED LAW EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED LAW EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED EVAPORATOR REBOILER P12034B TRANSFER PUMP P45039B ALKALINE EFFLUENT PUMP TREATED EVAPORATOR REBOILER P15042 FLOOR DRAINS DISCHARGE PUMP P45031B PROCESS CONDENSATE XEER PUMP TREATED EVAPORATOR REBOIL	CESIUM ION EXCHANGE COLUNN PIDOZBA WASTE FEED EVAPORATOR FEED PUMP P40558 TREATED LAW TRANSFER PUMP V120010 CESIUM ION EXCHANGE COLUNN PIDOZBA WASTE FEED EVAPORATOR FEED PUMP P430018 TRETED LAW TRANSFER PUMP V120012 CESIUM ION EXCHANGE COLUNN PIDOZBA WASTE CONCENTRATE TAKE-OFF PUMP P43008 TRETED LAW TRANSFER PUMP V12010A VESSEL VENT SCRUBBER P12002A HLW FEED KER PUMP P43066 RESIN TRANSFER PUMP V12010B TECHNETIUM ION EXCHANGE COLUNN P12002B HLW FEED KER PUMP P43066 RESIN TRANSFER PUMP V12010B TECHNETIUM ION EXCHANGE COLUNN P12003A LAW ULTRAFILITRATION FEED PUMP P43067 RESIN TRANSFER PUMP V12010B TECHNETIUM ION EXCHANGE COLUNN P12003B LAW ULTRAFILITRATION FEED PUMP P43067 RESIN TRANSFER PUMP V12015A TECHNETIUM ION EXCHANGE COLUNN P12033B SR/TRU LAG STORAGE XERR PUMP P45012A PR0CESS CONDENSATE XFER PUMP V12015A LAW FEED EVAPORATOR REBOILER P12033B SR/TRU LAG STORAGE XERR PUMP P45039B ALKALINE EFFLUENT PUMP V1300B LAW FEED E	CESIUM ION EXCHANGE COLUMN	CESIUM ION EXCHANGE COLUMN

Figure 4A-78



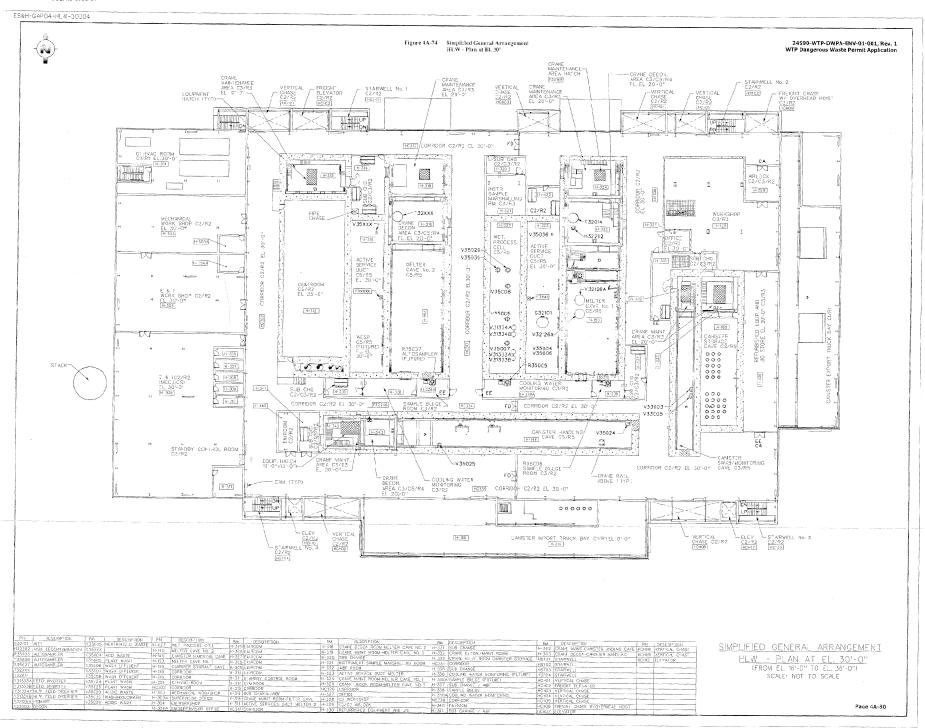


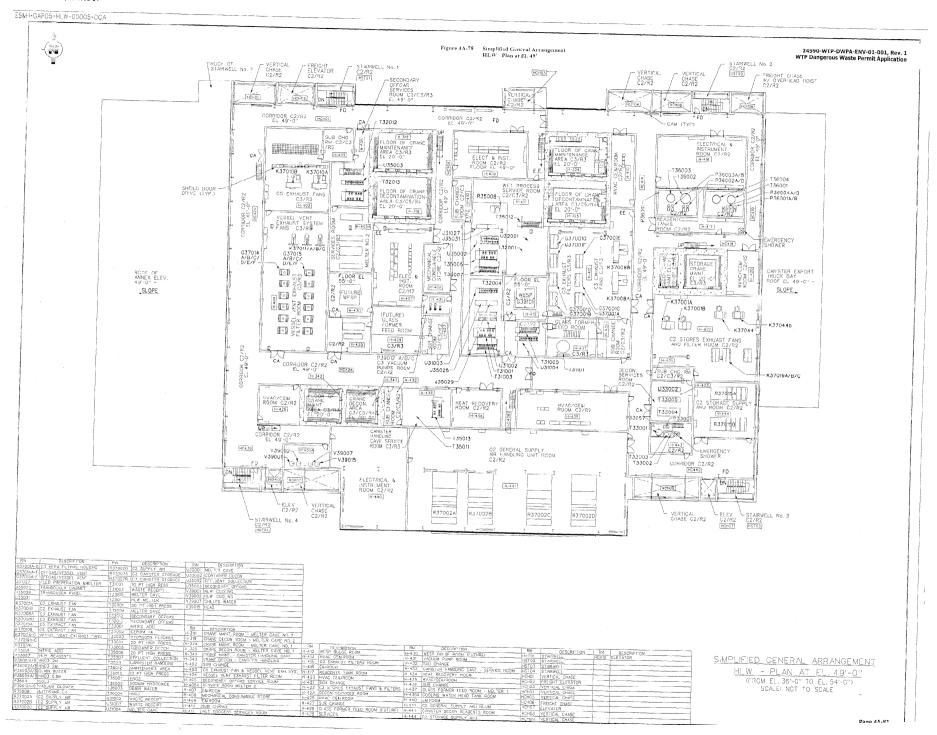
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	V110018	LAW FEED EVAPORATOR FEED VESS.	T	V43110A	TREATED LAW COLLECTION VESSEL "A"
	V11002A	EVAPORATOR RECIRCULATION VESSEL	7	V431108	TREATED LAW COLLECTION VESSEL "B"
	V11002B	EVAPORATOR RECIRCULATION VESSEL	7	V43110C	TREATED LAW COLLECTION VESSEL "C"
	V11020A	LAW RECEIPT VESSEL	7	V45009A	PLANT WASH VESSEL
	V110208	LAW RECEIPT VESSEL	7	V450098	PLANT WASH VESSEL
	V11020C	LAW RECEIPT VESSEL	7	V45013	PRIMARY ALKALINE EFFLUENT VESSEL
•••	V110200	LAW RECEIPT VESSEL	T	V45018	SECONDARY ALKALINE EFFLUENT VESSEL
	V12001A	ENVELOPE "O" RECEIPT VESSEL	7	V45028A	PROCESS CONDENSATE VESSEL "A"
	V12001C	ENVELOPE TO RECEIPT VESSEL	T	V450288	PROCESS CONDENSATE VESSEL "B"
	V120010	ENVELOPE TO RECEIPT VESSEL	11		
	V12001E	ENVELOPE TO RECEIPT VESSEL	- · ·		
	V12007	HLW FEED BLENDING VESSEL	7	E19701	NON-ACTIVE CONDENSATE HEAT EXCHANGER
	V12010A	EVAPORATOR CONCENTRATE BUFFER VESSEL		M18043A	MOTOR CONTROL CENTER
	V120108	EVAPORATOR CONCENTRATE BUFFER VESSEL	7 [M18044A	MOTOR CONTROL CENTER
	V12011A	ULTRAFILTRATION FEED VESSEL	7	P19701	PUMP
	V120118	ULTRAFILTRATION FEED VESSEL		P19701	PUMP
;	V12015A	PERMEATE HOLD VESSEL	T	P19702	PUMP
••	V120158	PERMEATE HOLD VESSEL	7	V11027	LINE FLUSH MAKE-UP VESSEL
	V12015C	PERMEATE HOLD VESSEL	T	V13026	EVAPORATOR KETTLE
	V13001	LAW FEED VESSEL	1	V13102	ION EXCHANGE PROCESS TANK
	V13073	CESIUM CONCENTRATE STORAGE VESSEL	T	V13103	ION EXCHANGE PROCESS TANK
	V15009A	PLANT WASH VESSEL		V13104	IDN EXCHANGE PROCESS TANK
••	V15013	ACIDIC EFFLUENT VESSEL	1	V19701	NON-ACTIVE CONDENSATE VESSEL
	V15018	CONTAMINATED EFFLUENT VESSEL	1	V19702	NON-ACTIVE LP CONDENSATE VESSEL
	V41001A	LAW BUFFER VESSEL "A"	1	V43069	EVAPORATOR KETTLE

Figure 4A-79

<u>Waste management areas</u> <u>Pretreatment - plan at el. 28'-0"</u>

SCALE: NOT TO SCALE





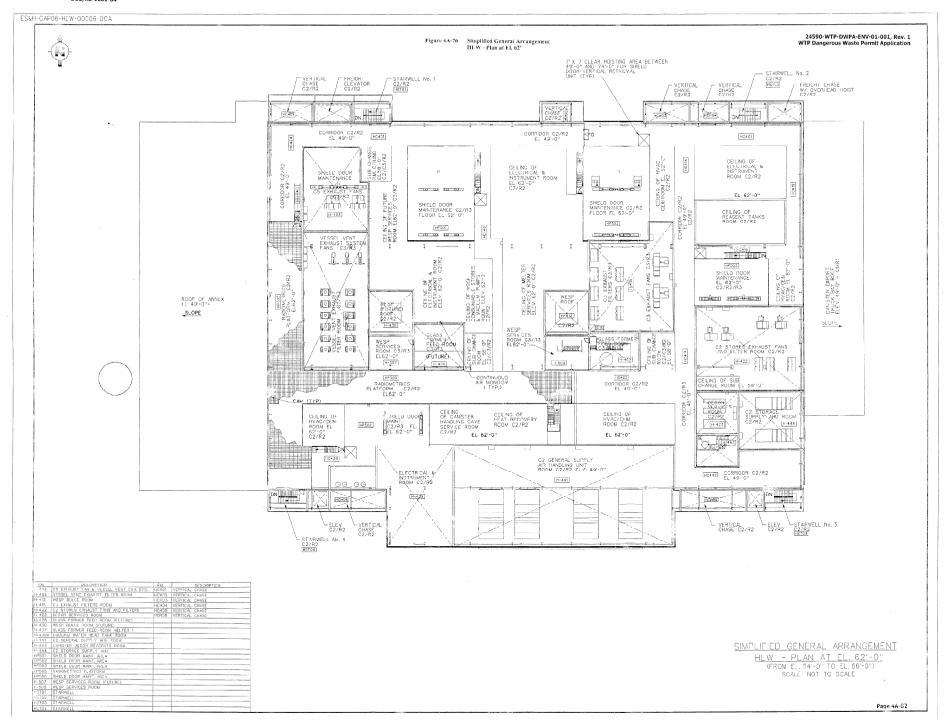
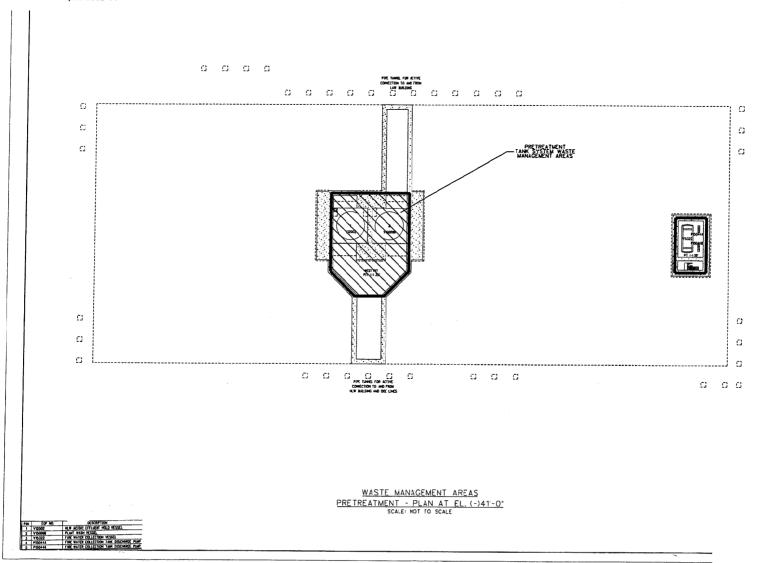
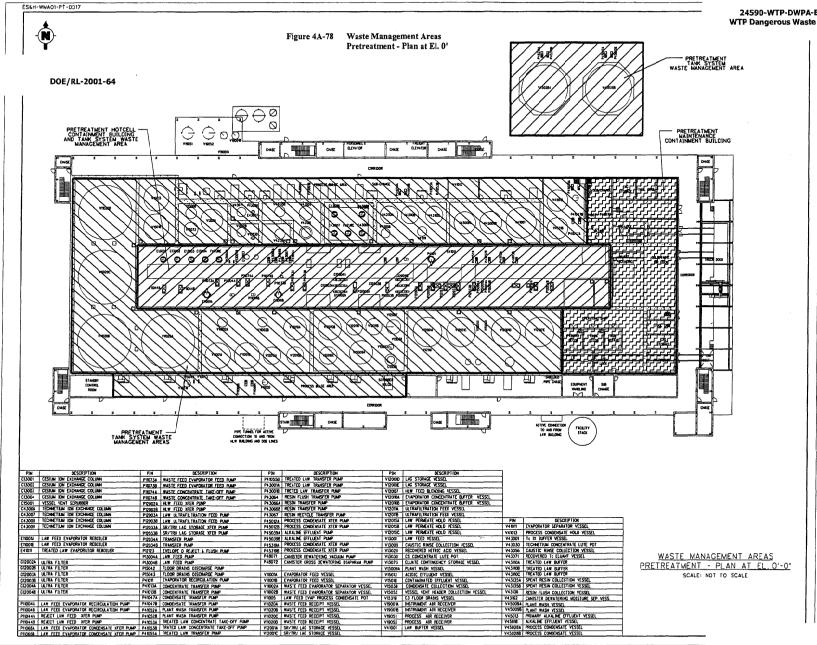


Figure 4A-77 Waste Management Areas
Pretreatment - Plan at El. -41'





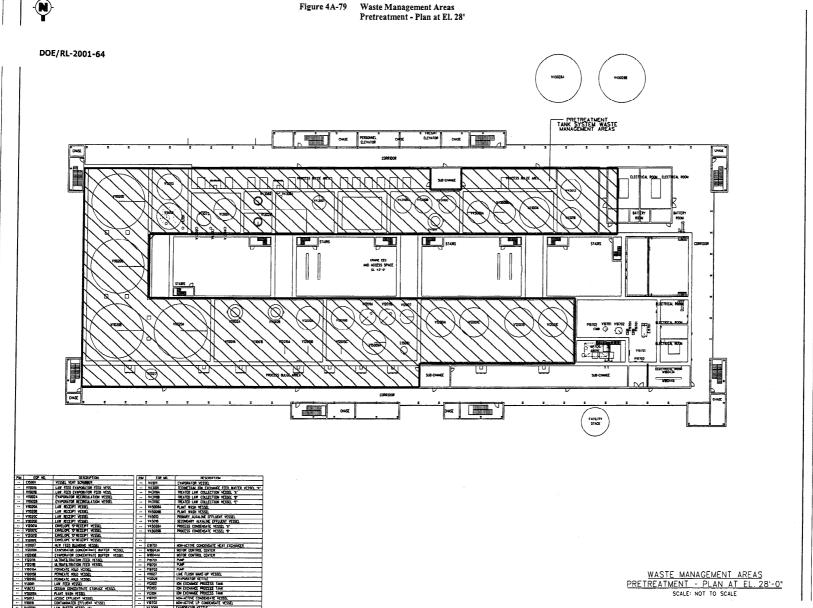




Figure 4A-80 Waste Management Areas Pretreatment - Plan at El. 56'

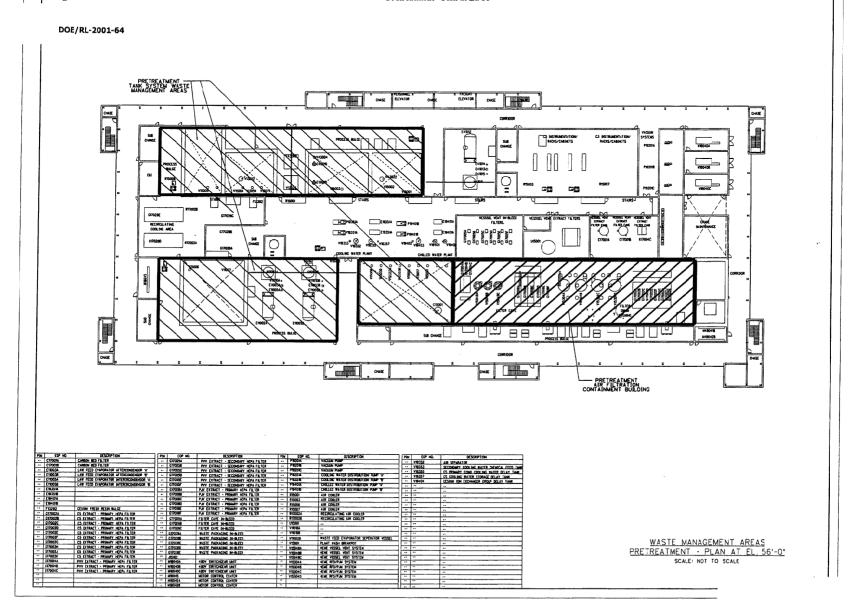
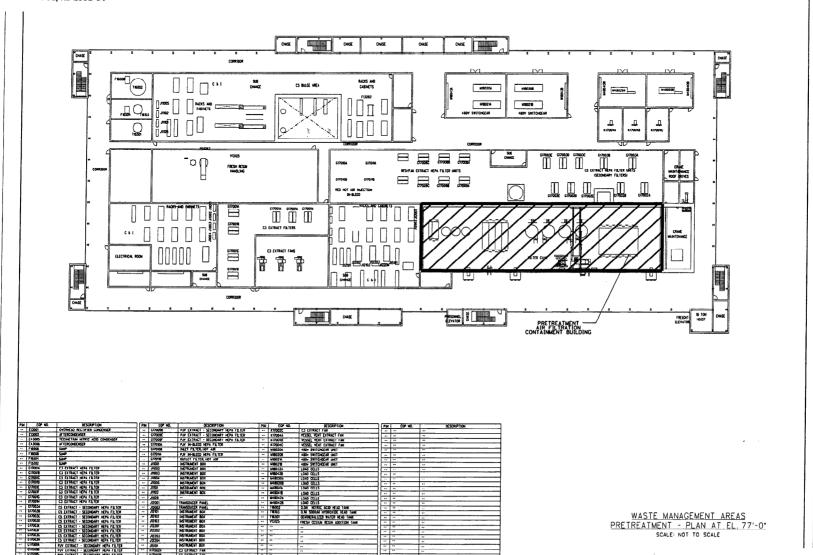
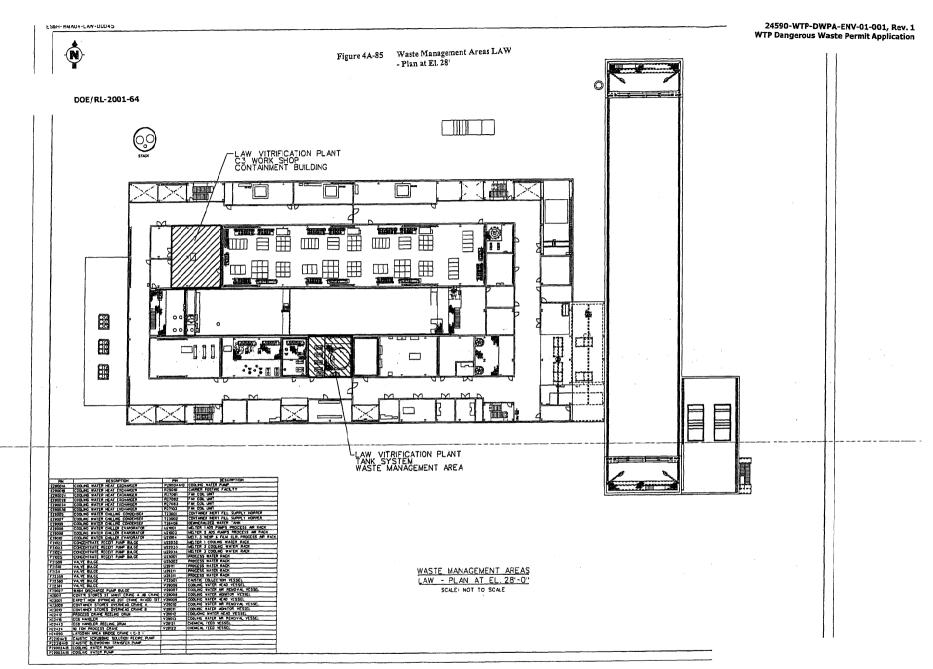
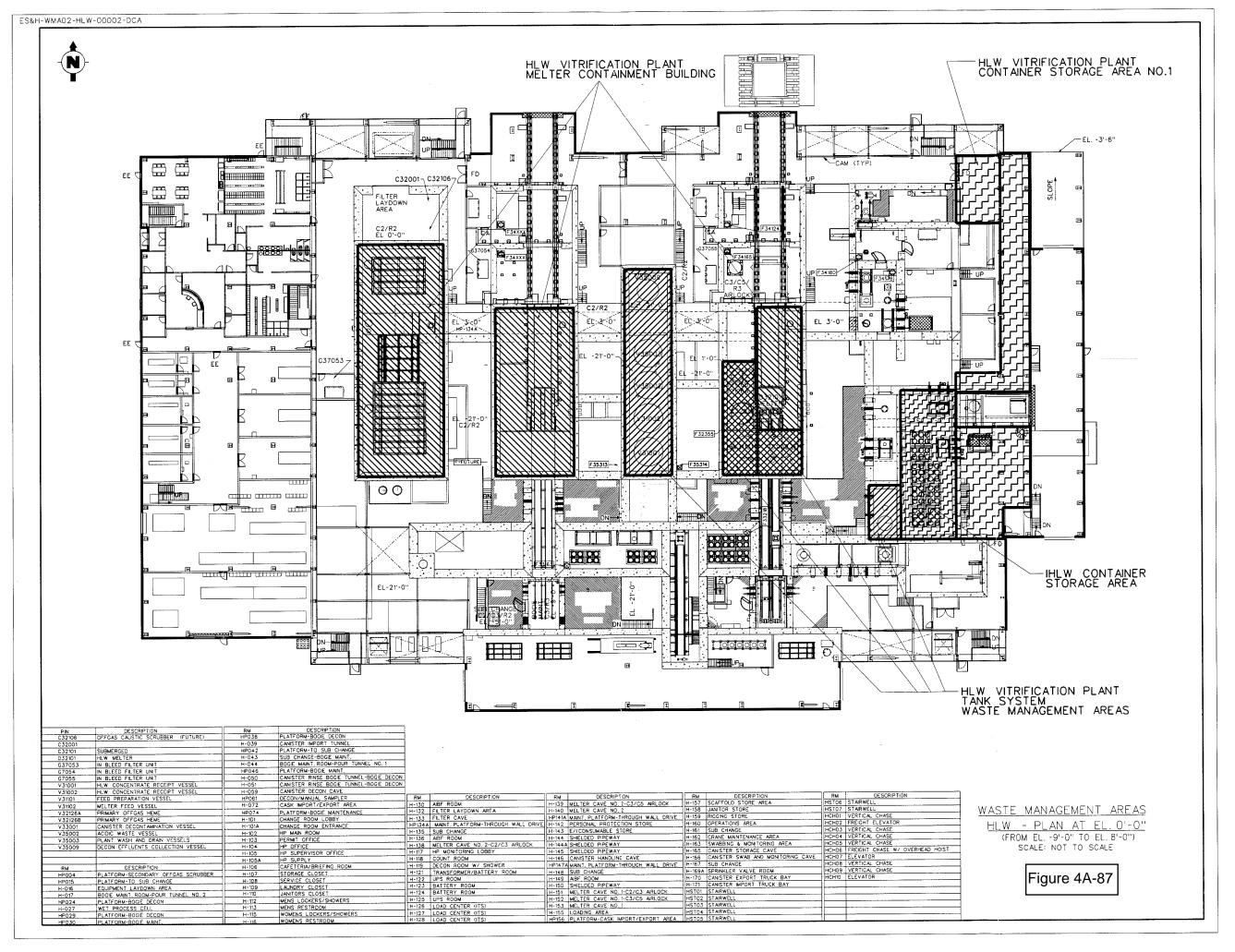
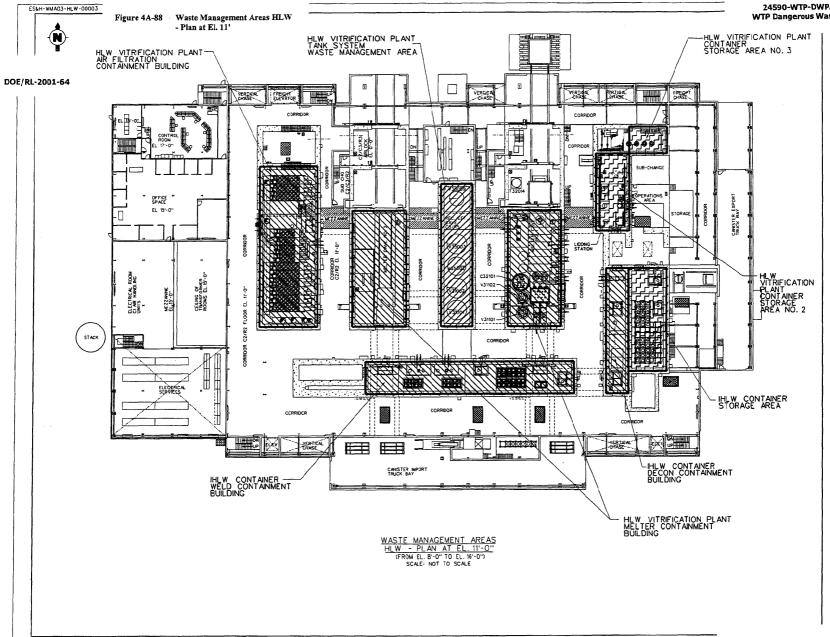


Figure 4A-81 Waste Management Areas
Pretreatment - Plan at El. 77'









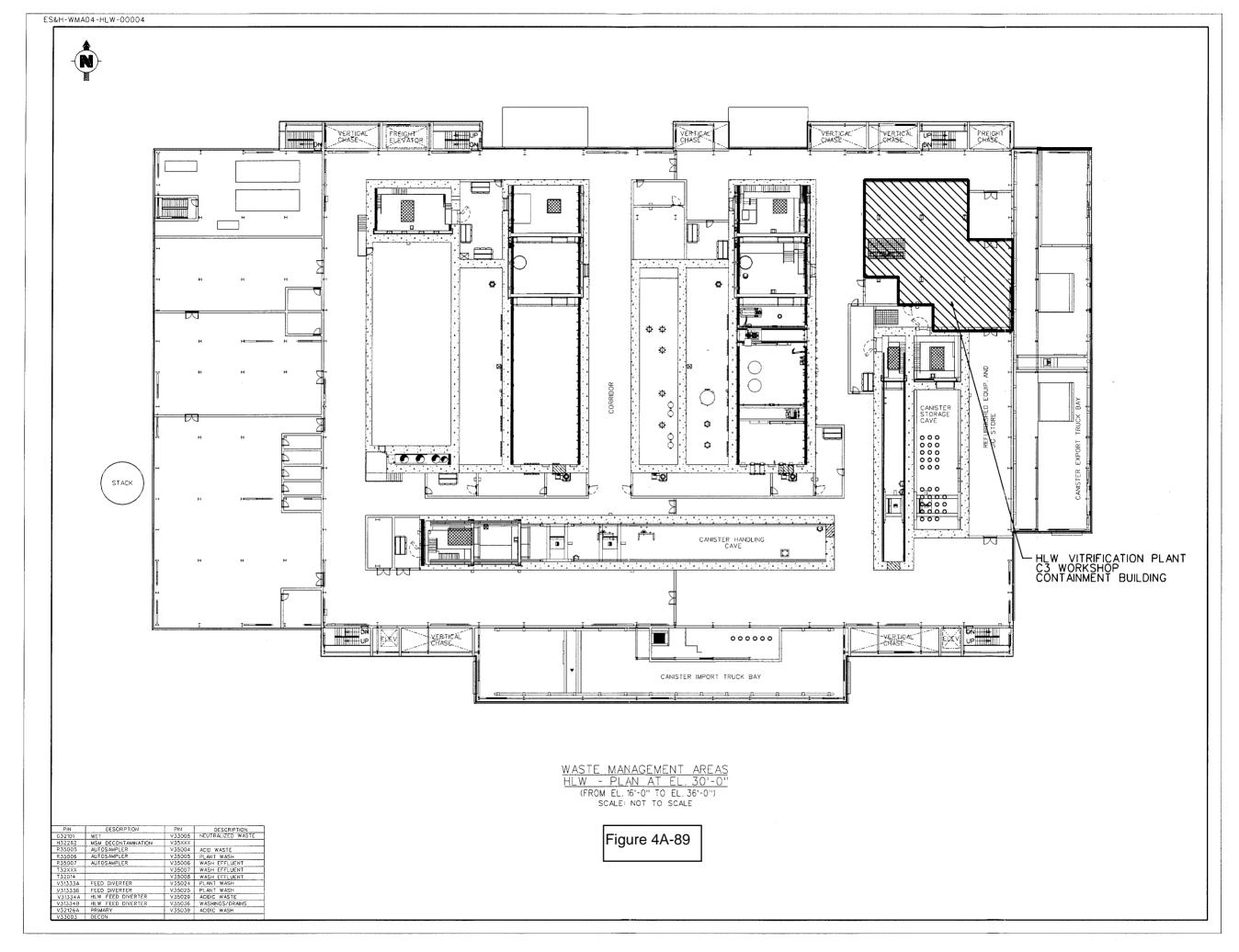
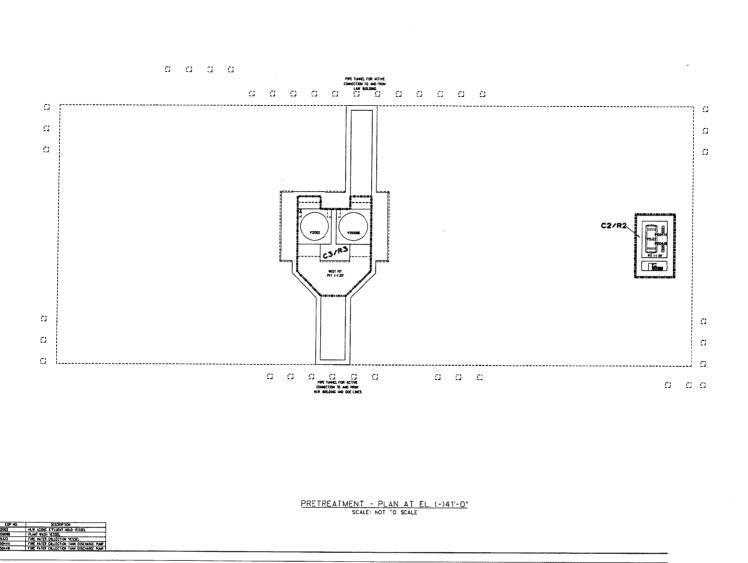
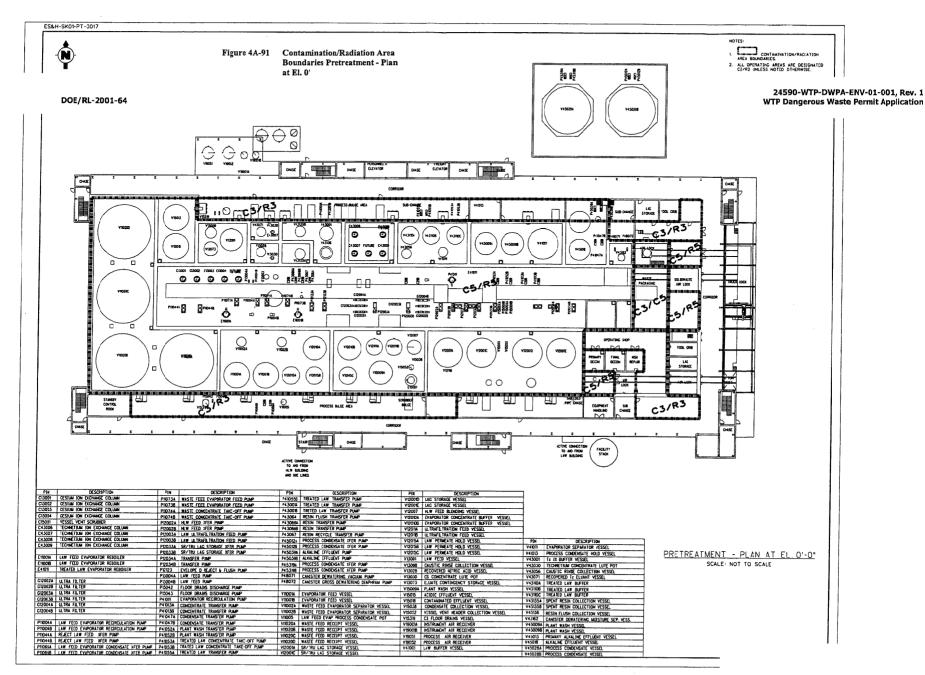
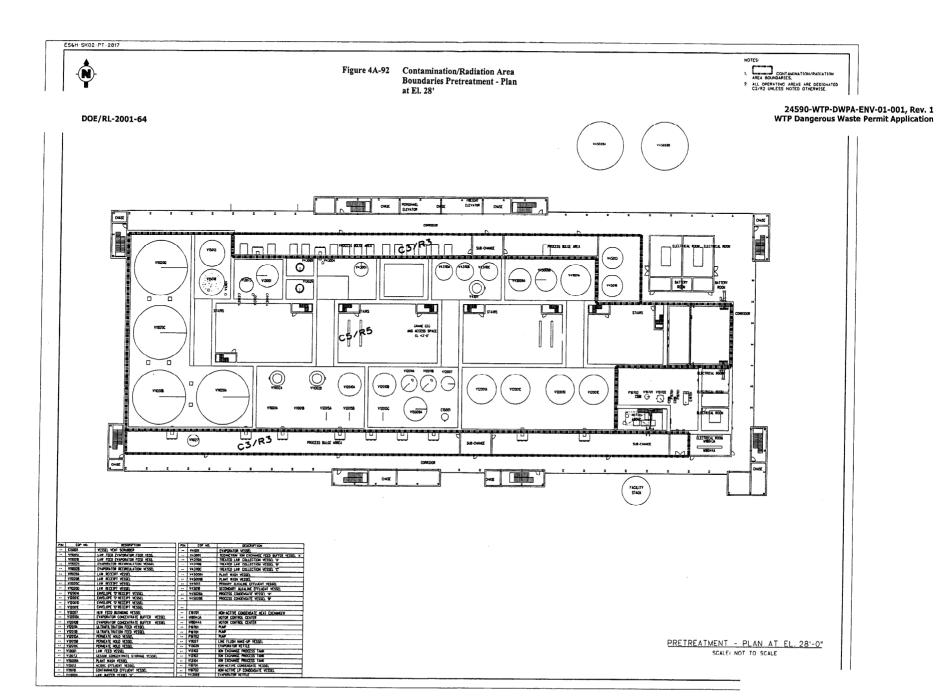




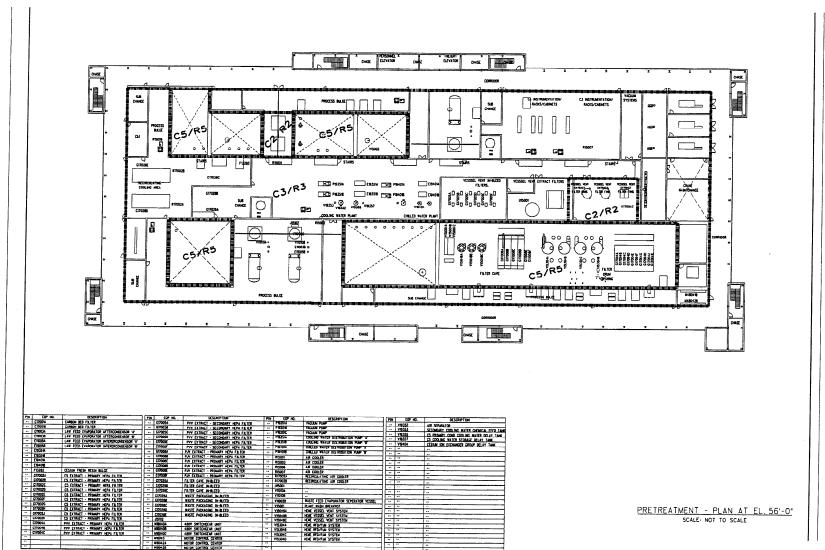
Figure 4A-90 Contamination/Radiation Area Boundaries Pretreatment - Plan at El. -41'







24590-WTP-DWPA-ENV-01-001, Rev. 1 WTP Dangerous Waste Permit Application



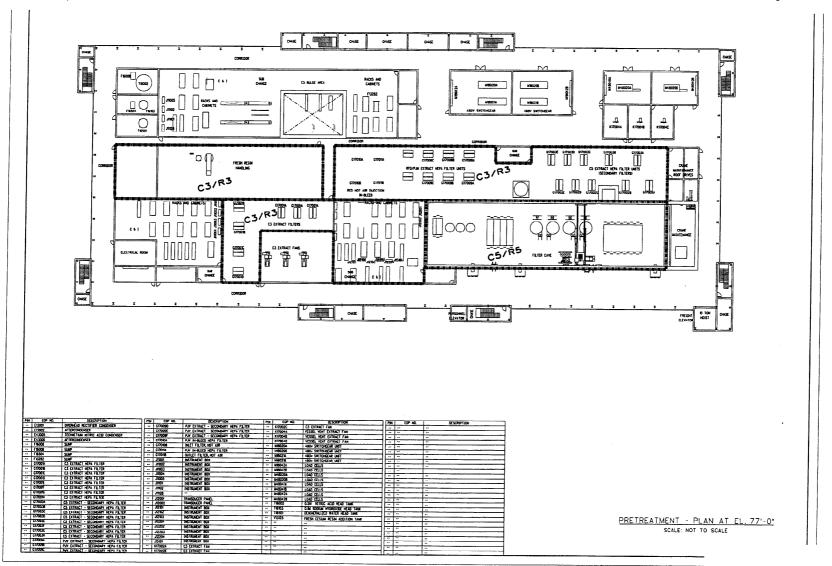
Boundaries Pretreatment - Plan at El. 77'

1. MARIA BOUNDARIES.
2. ALL OPERATING AREAS ARE DESIGNATED C2/R2 UNLESS NOTED OTHERWISE.

NOTES:

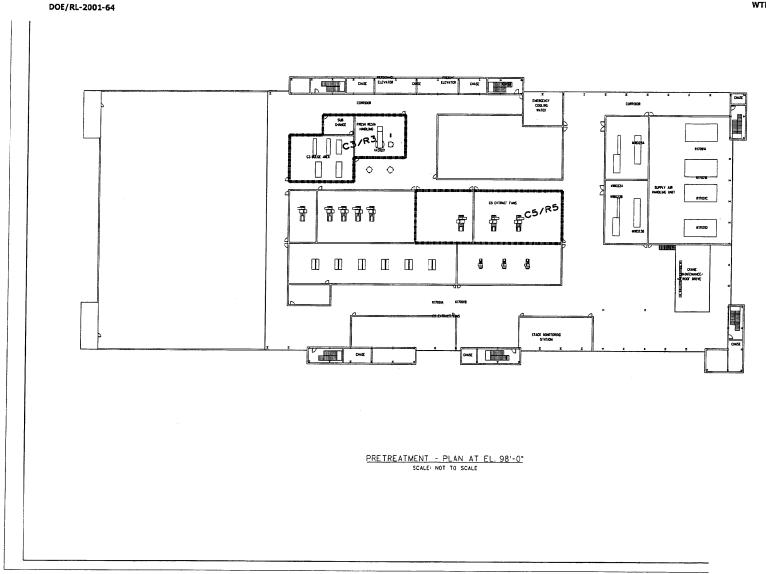
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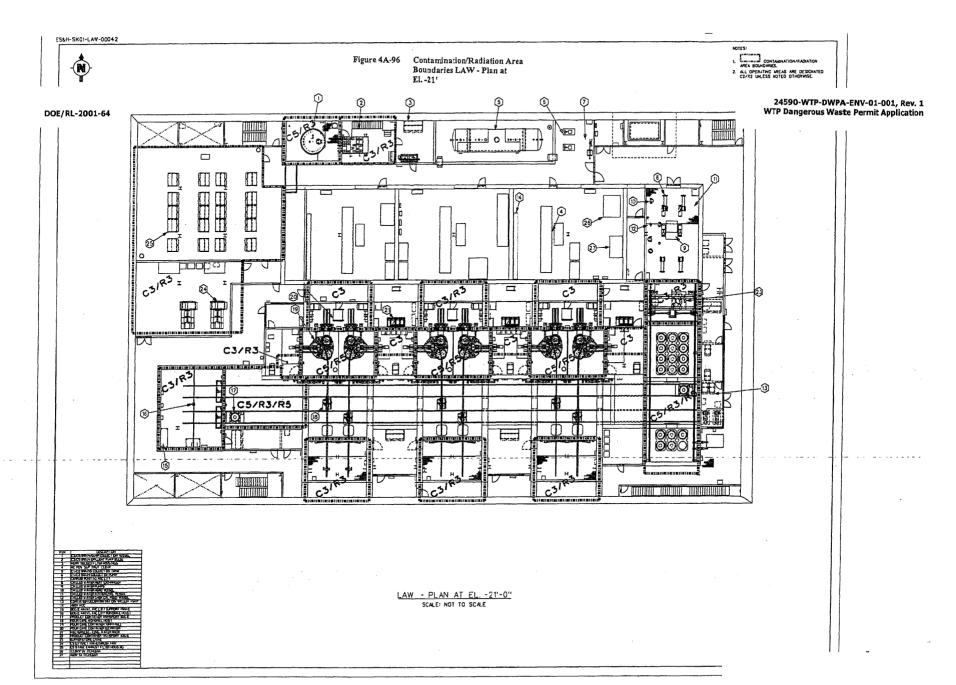
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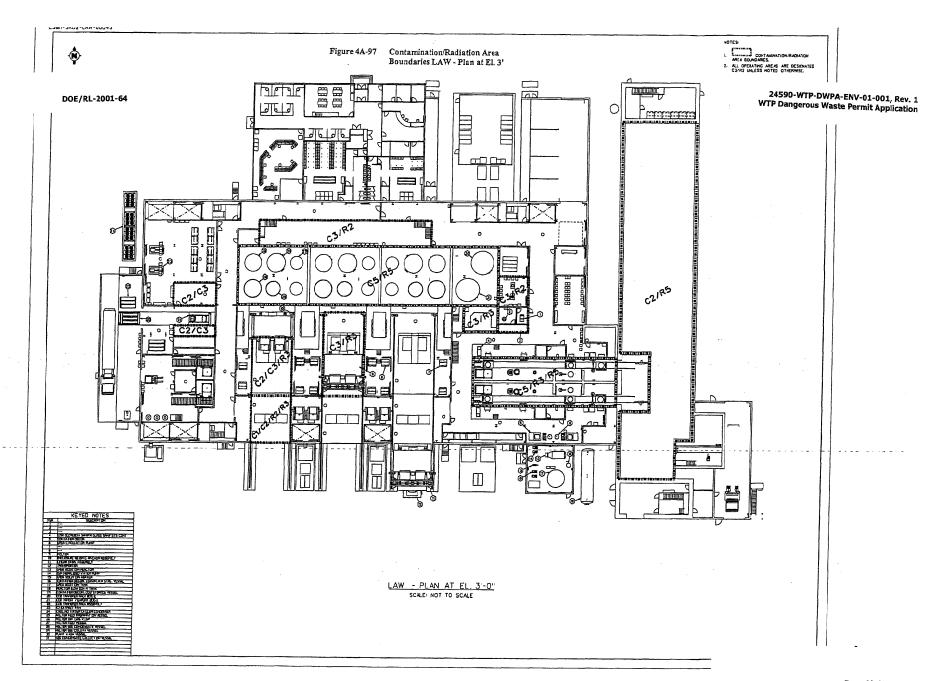


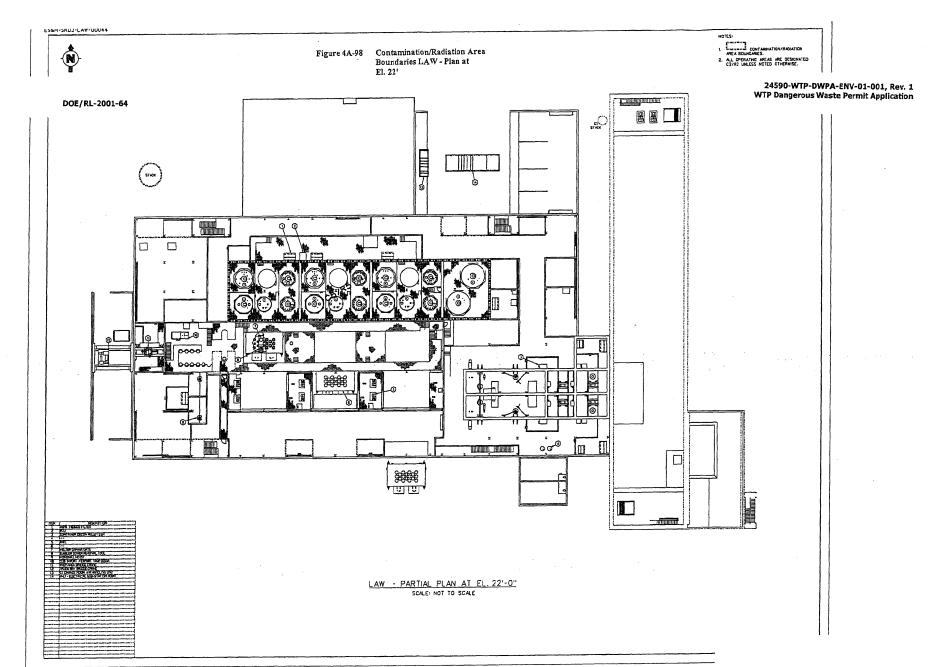
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2. ALL OPERATING AREAS ARE DESIGNATED CZ/RZ UNLESS NOTED OTHERWISE.

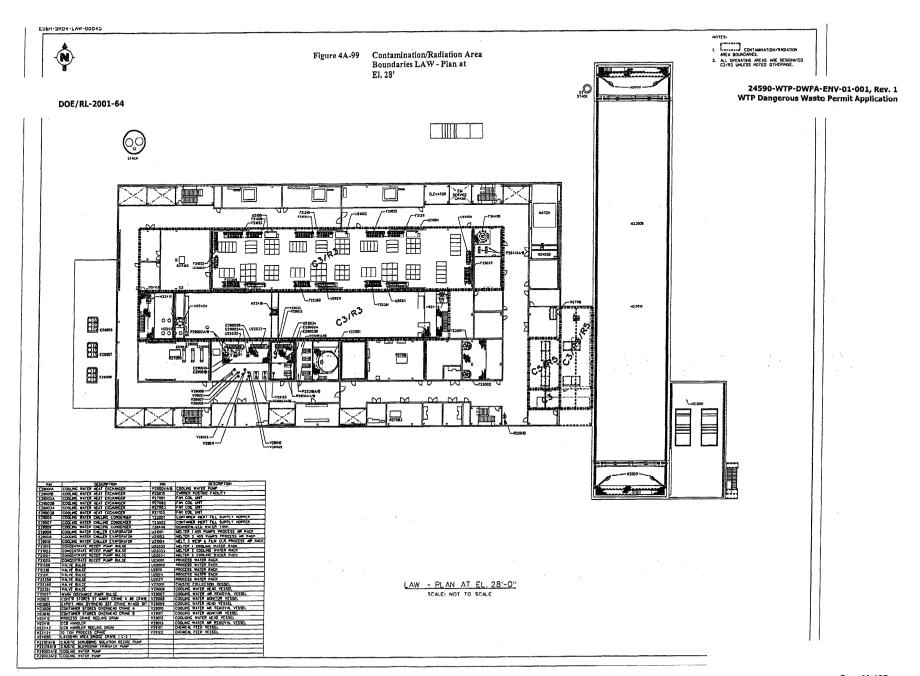
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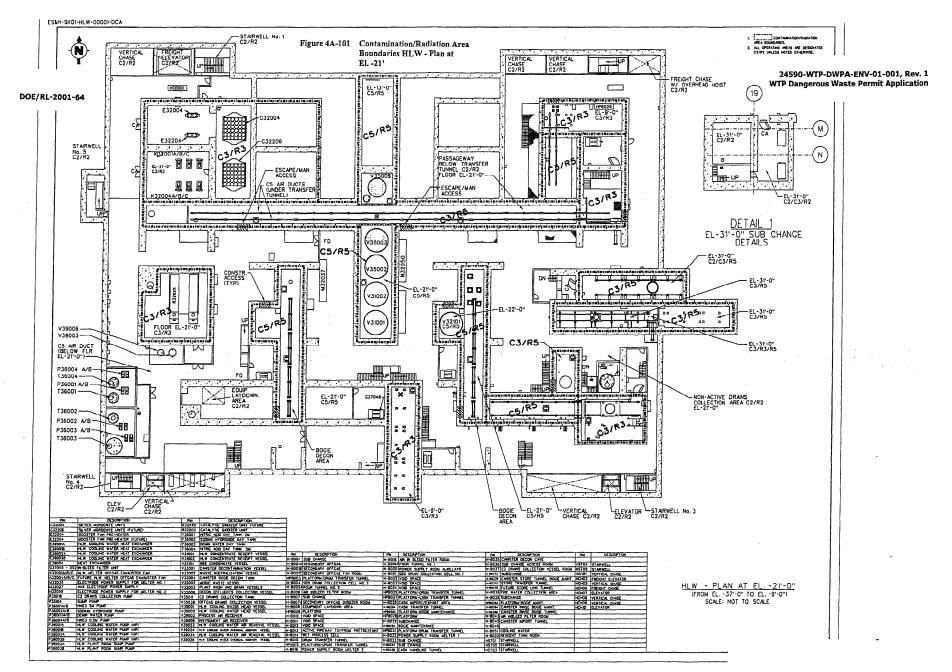


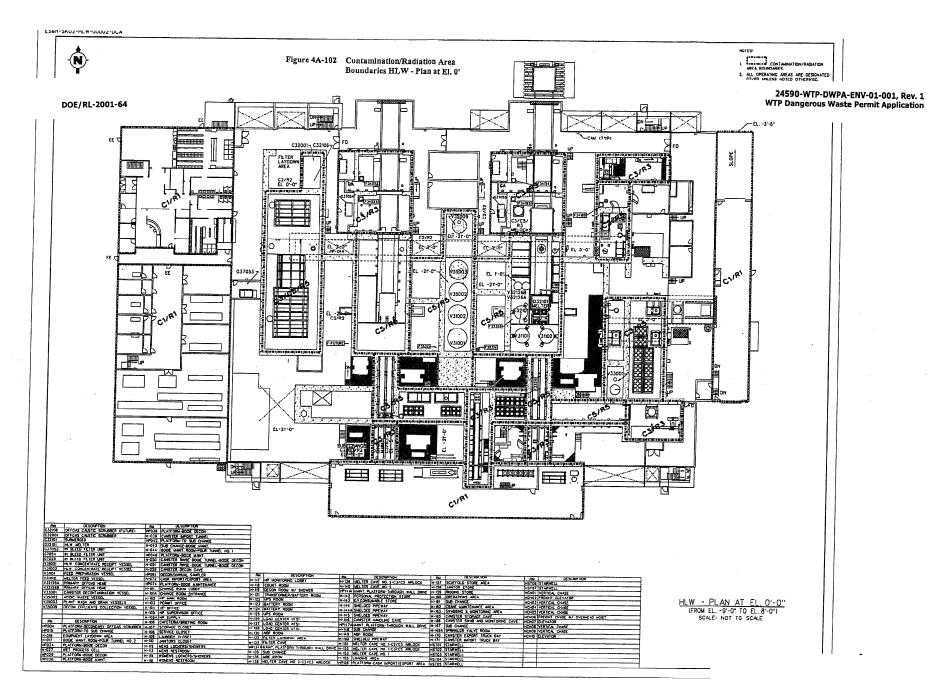


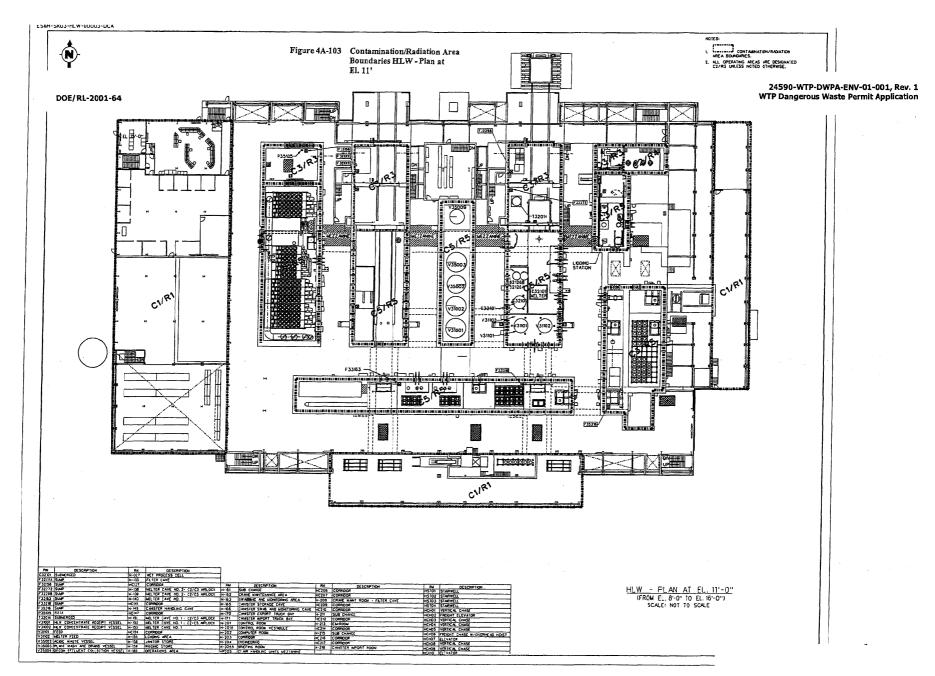


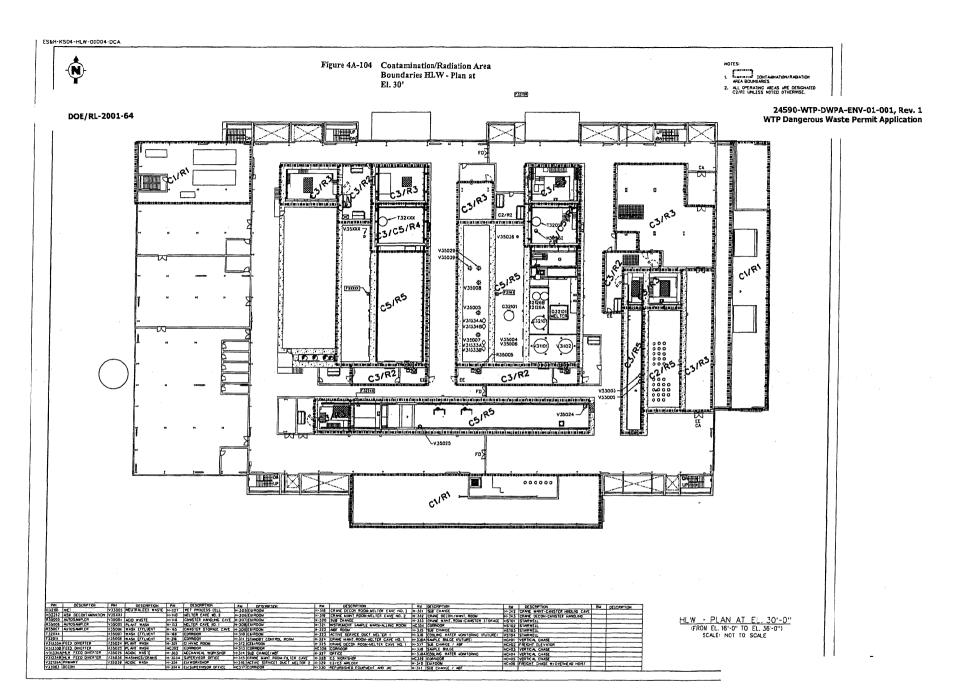


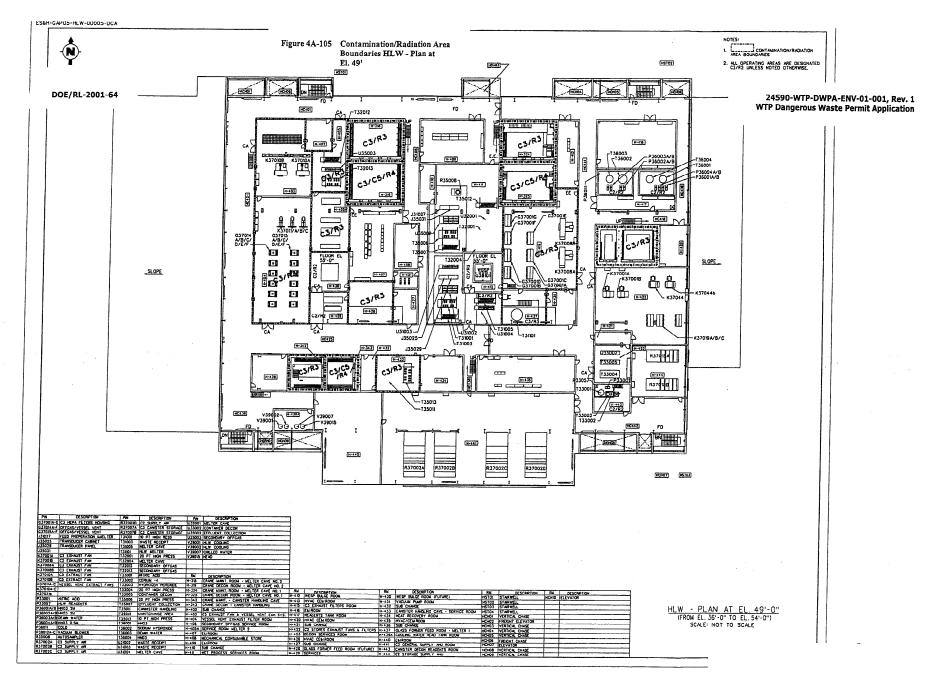


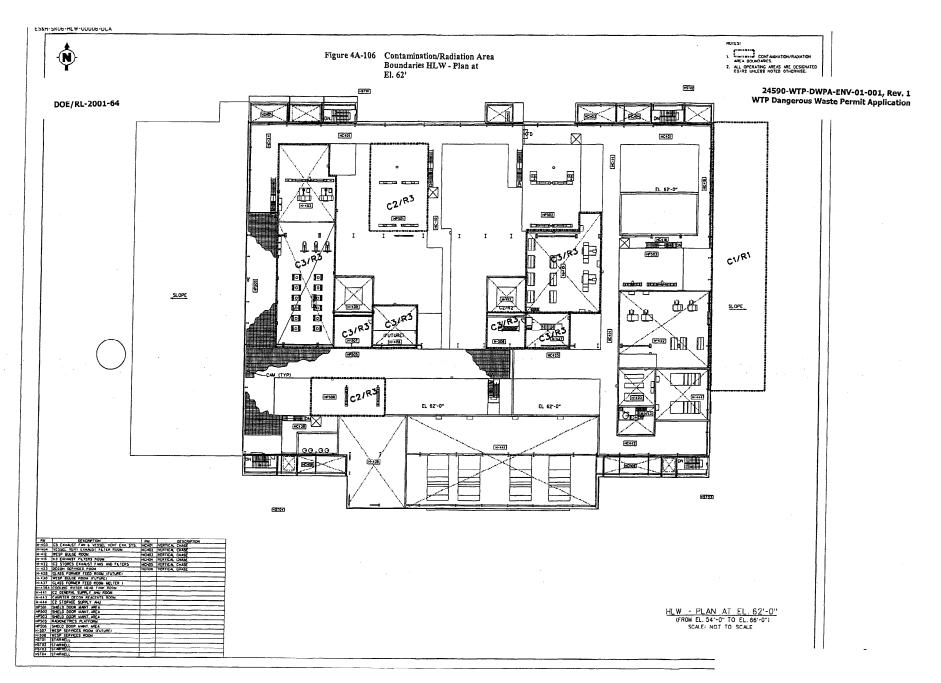












DECON MOM HVAC REPAIR & SPARES HOT CELL STORAGE MCC ELV CHANGE ROOM PIG STORAGE DUMB WAITER RAD PREP PREP ICP/MS ICP/MS BUILDING ENG BUILDING MGR LUNCH ROOM DECON HOT CELL MOR PROCESS TECH PROCESS TECH ICP/AE8 SHIFT CONFERENCE ROOM AND TRAINING SATELLITE ACCUMULATION AREA RAD CHEM MGR PROCESS CHEM MOR LOBBY QUANTITATION GCMS SVQA GENERAL CHEMISTRY ANALYTICAL DEVELOPMENT WASTE HANDLING & RECORDS SECRETAR BUPPLY & REF. SAMPLE STORAGE LAB MANAGER ACCESS STATION QUANTIT GC/MS VOA CARBON CUANTITATION GLASS ANALYSIS TCLP/PCT ERSONNEL HPT DECON RELEASE STATION STATION CHANGE ROOM SAMPLE PREP XRD 8EM

Figure 4A-107 Analytical Laboratory Main Level General Arrangement

Analytical Laboratory - Main Level General Arrangement

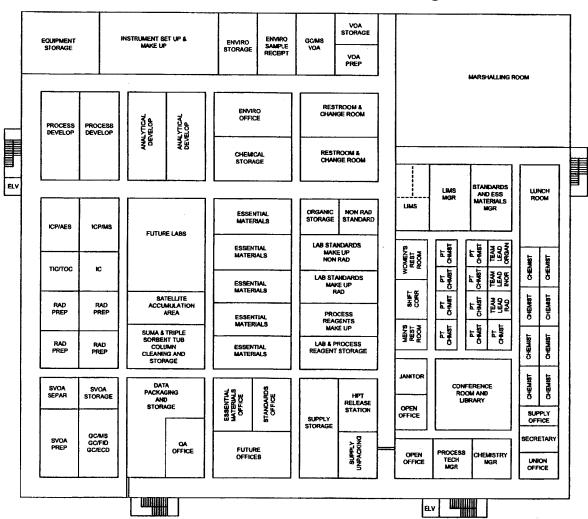
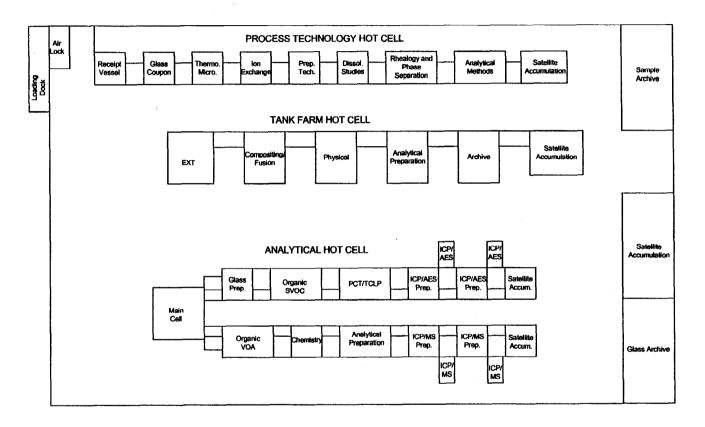


Figure 4A-108 Analytical Laboratory Second Floor General Arrangement

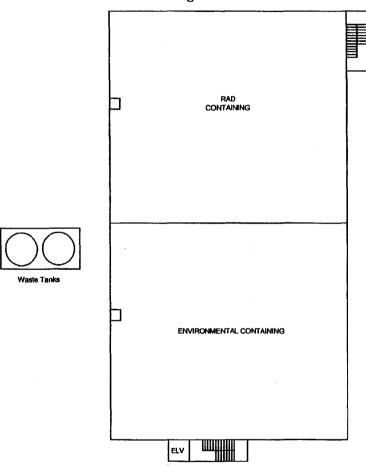
Analytical Laboratory - Second Floor General Arrangement

Figure 4A-109 Analytical Laboratory Hot Cell General Arrangement



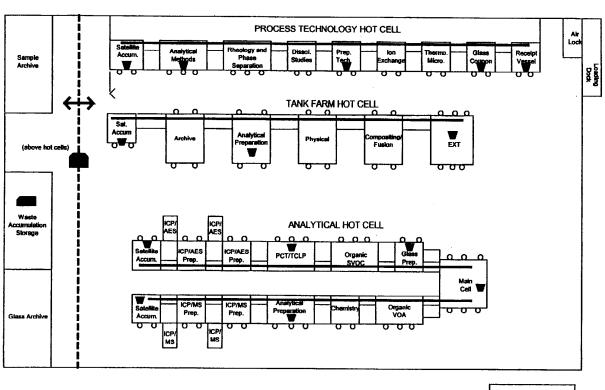
Analytical Laboratory - Hot Cell General Arrangement

Figure 4A-110 Analytical Laboratory Basement Level General Arrangement

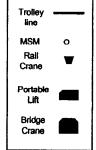


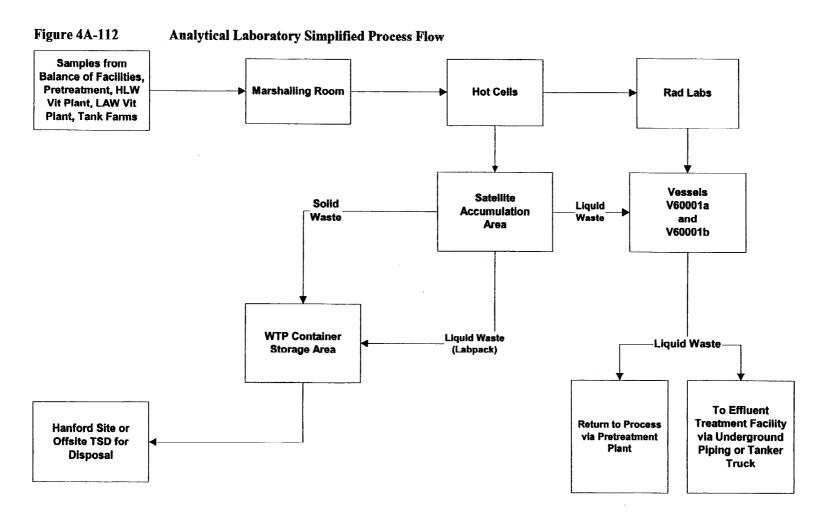
Analytical Laboratory - Basement Level General Arrangement

Figure 4A-111 Analytical Laboratory Hot Cell Mechanical Systems

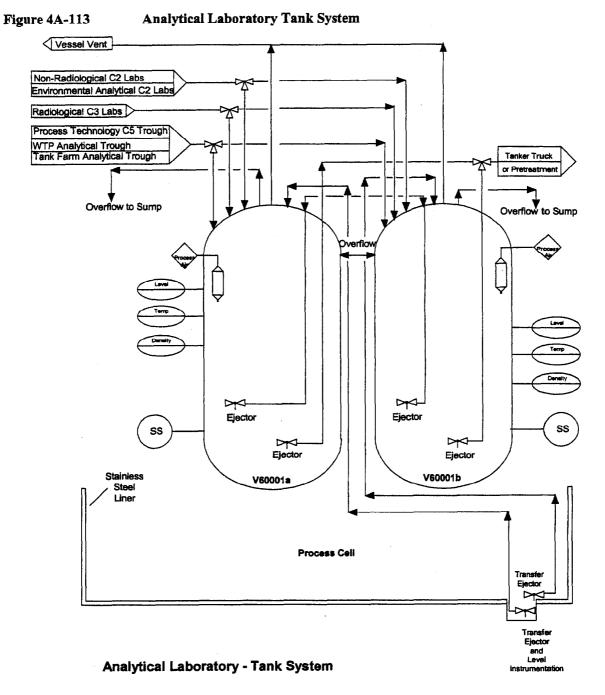


Analytical Laboratory - Hot Cell Layout Mechanical Systems

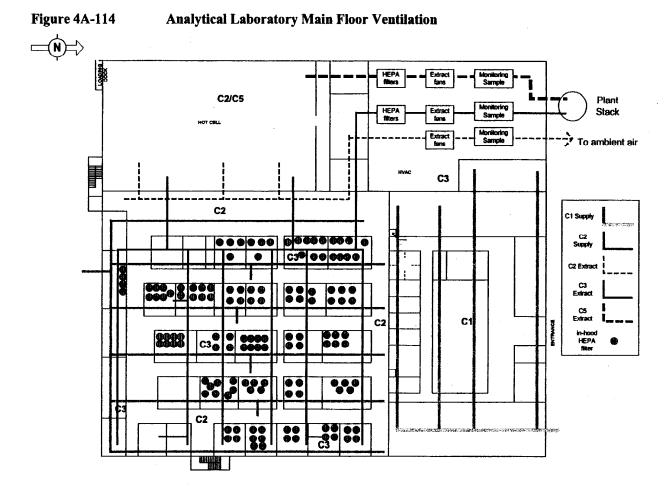




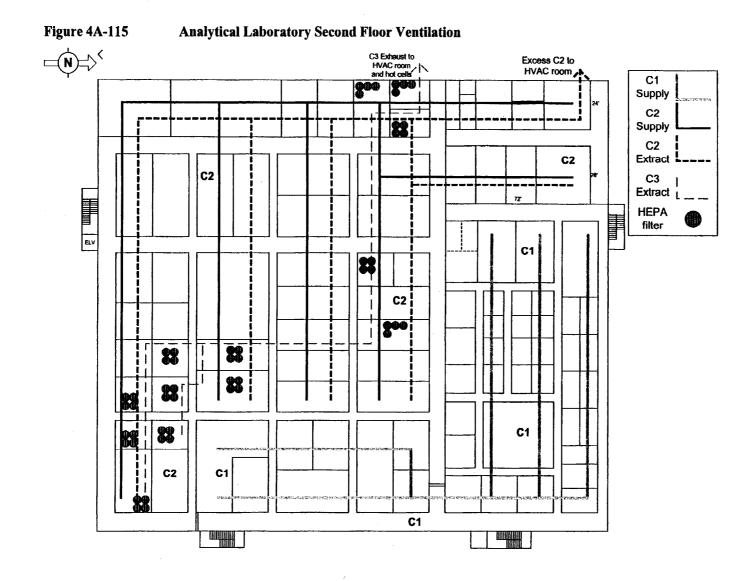
Analytical Laboratory - Simplified Process Flow



4A-119



Page 4A-120

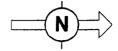


Page 4A-121

Figure 4A-116 **Analytical Laboratory Hot Cell Ventilation** C5 Extract to Stack C2 Extract into corridors To C2 **HVAC** C3 Extract room from hoods C2 Extract to HVAC room C2 C2 **HEPA** filter Manipulator Repair & Storage **C5** From C3 From C2 hoods агеа

Figure 4A-117

Analytical Laboratory Basement Level Ventilation



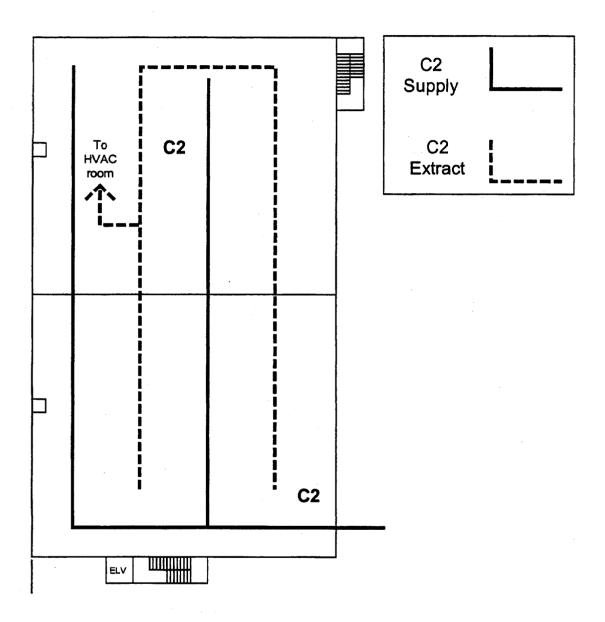
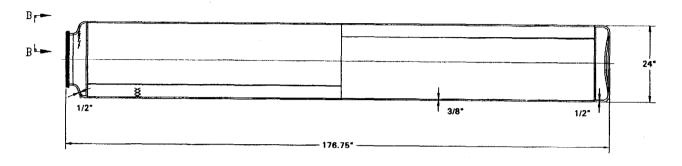


Figure 4A-118 Schematic of an Example IHLW Container and Label



CANISTER ASSEMBLY

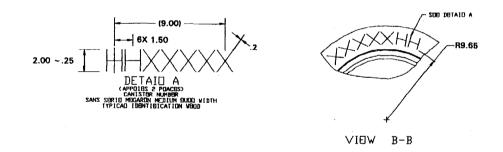


Figure 4A-119 Schematic of an Example ILAW Container and Label

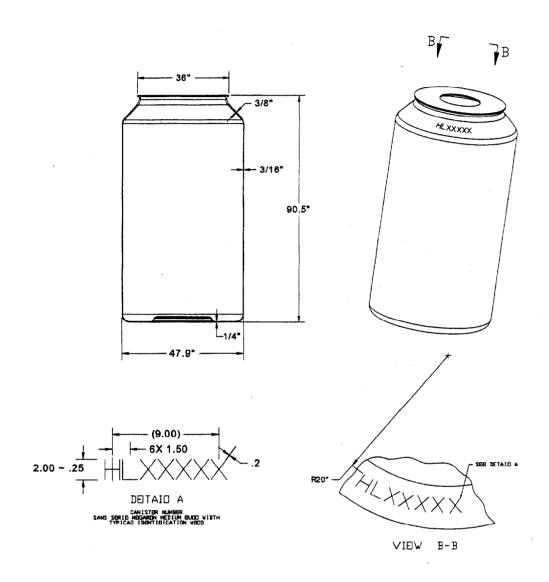


Figure 4A-120 Typical Arrangement of a Reverse Flow Diverter

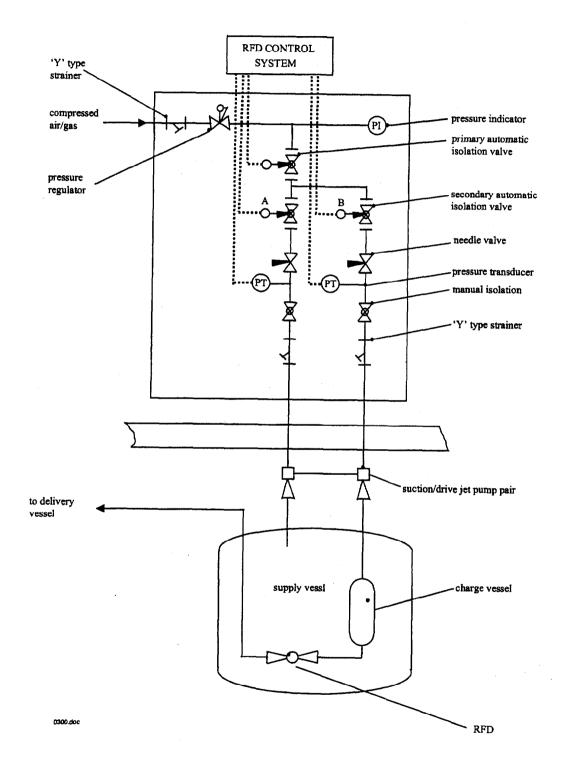
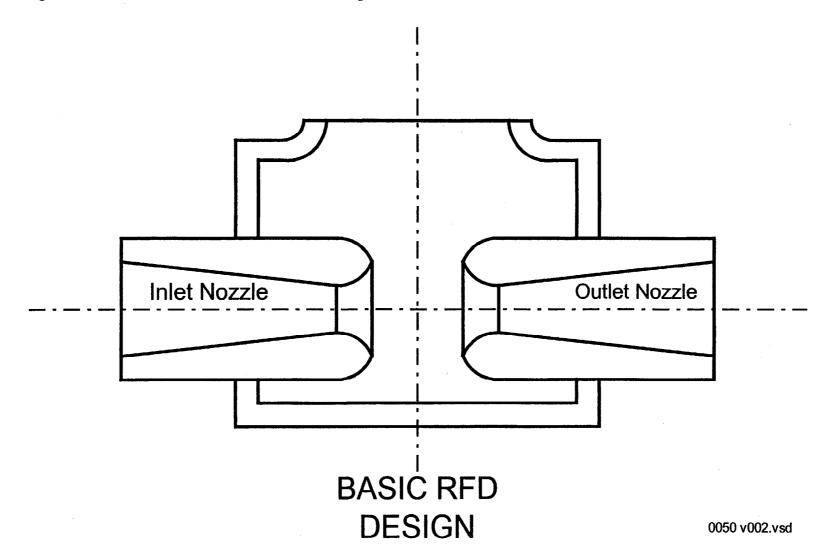




Figure 4A-121 Basic Reverse Flow Diverter Design

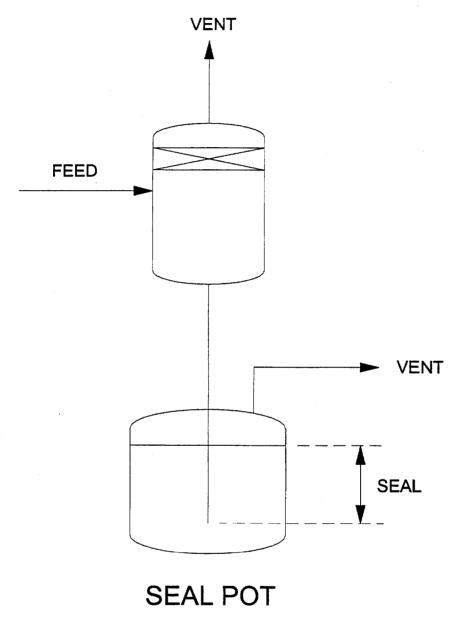


VAC. BREAK ACTUATOR STEAM VALVE STEAM VALVE CABINET SUPPLY 40 mm - 50 mm n.b. Backup VENT AIR Needle valve locked 25 mm n.b. 1 4 connection 15 NRV 🗘 open to assure in-bleed TO OTHER _ mm on failure of vent air **SUPPLY** n.b. VALVES supply air 3 WAY VALVE C2 OR C3 AREA TO CELL OR **VENT SYSTEM** VESSEL VENT SYSTEM **BREAKPOT** HIGHEST DISCHARGE POINT OVERFLOW STEAM SUPPLY PIPE MINIMUM HEIGHT TO BE AT LEAST 1 **VENT BAROMETRIC** SYSTEM **HEAD OF FLUID** ABOVE A LIFT AND BREAK POT FORCE EJECTOR DISCHARGE PIPE OR THE MAXIMUM FLUID LEVEL IN THE SUPPLY VESSEL FOR A SUBMERGED **EJECTOR EJECTOR DELIVERY PIPE DELIVERY VESSEL** LIFT AND VENT SYSTEM **FORCE EJECTOR** C4 OR C5 CELL **EJECTOR** SUCTION PIPE ALTERNATIVE SUBMERGED **EJECTOR TYPICAL** ARRANGEMENT OF A STEAM EJECTOR **END OF SUCTION PIPE** OR MINIMUM FLUID **SYSTEM** SUPPLY VESSEL LEVEL

Figure 4A-122 Typical Arrangement of a Steam Ejector System

0051 v002.ved

Figure 4A-123 Typical Seal Pot Arrangement



000323-BDF-11-V001

Figure 4A-124 Typical Breakpot Arrangement

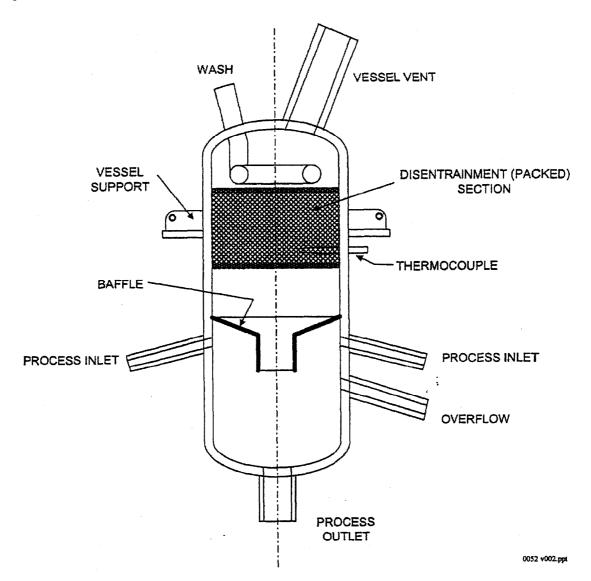


Figure 4A-125 **Typical Type I Sump** To Plant Wash Vessel Pump Controller **Protective Coating** on Concrete Level Indicator Level Transmitter 0. Q Ball Valve ٠. 0 . ablaFlex Line Ø. Stainless Steel Liner ٥.٧ 0. • △ 0. ۰. ·′φ. . 0 ٥. 0. . \ \ \ \ ٥. ٠۵ ٠. Pump Sump ٠. 0. 0. ۰. ۰. ٠. ٠. ٠. ٠.

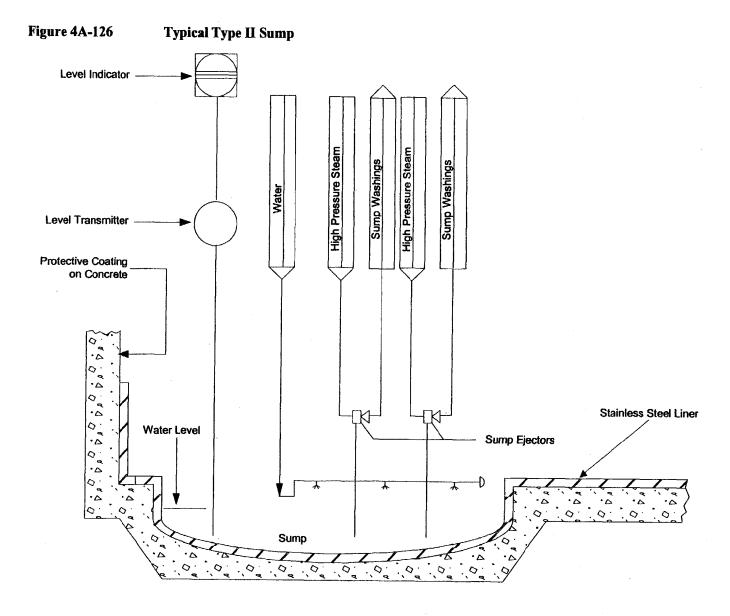


Figure 4A-127 Typical Bulge Configuration

